

Air Conditioning & Refrigeration News

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IN THIS ISSUE

To Sell—Ideas

What's more important to sell—ideas or merchandise? To any man worthy of the name of "wholesale salesman" the answer should be plain. But, ideas are merchandise that is not always so easy to obtain. Second instalment of the buyer's guide to ideas for wholesale salesmen, page 2.

Confusion In Air Conditioning

"There are two divisions in the air conditioning field," says J. J. Murphy of the Maryland Refrigeration Co., "who are in the position of salesmen for passenger automobiles and salesmen for trucks going after the same customer." It shouldn't be done, says Mr. Murphy, who has some other interesting ideas about air conditioning as a business. Page 4.

The Dope on Air Circulation In Walk-In Coolers

Proper air circulation is a necessity in walk-in coolers using ultraviolet radiation. So when Westinghouse engineers got to studying the problem of how to get the right kind of air circulation, they found out a whole lot of things that should improve such installations in the field. They tell you about them on page 12.

His Job Is All Wet

The valves in the system stick, and he detects copper plating in various parts of the system. He tries some remedies but they don't seem to work. That's the problem of an Illinois service man. So he writes the NEWS, and gets an answer based on the testimony of the experts. Maybe you have a moisture problem like the one he tells about. Page 14.

Fast Freezing Coca Cola

Also on page 14 a reader is puzzled by Coca Cola freezing just as the bottle is opened. F. O. Jordan suggests a possible answer.

Tricks For the Sticks

International Harvester Co. knows plenty about selling in the rural areas. And they're putting that knowledge to work with their new refrigeration line. One of their stunts is related on page 15.

Rebuilding Equipment—Home-Made

Second in the series of articles covering equipment for refrigeration unit re-building operations tells about a motor tester that any service engineer can build. Page 16.

Gilfillan Bros. Plant Destroyed By Fire

LOS ANGELES—Fire believed to have been caused by sparks from an incinerator destroyed the plant and inventory of Gilfillan Bros. here on the morning of Nov. 30, with damage estimated at between \$500,000 and \$600,000. Rebuilding operations will be started immediately, according to S. W. Gilfillan, co-owner of the firm.

Inventory at the time of the fire is understood to have approximated \$180,000, and was covered 100% by fire insurance. Buildings and equipment were insured for \$117,000.

The two-story brick building, one block square, caused a spectacular fire, which was already out of control when the fire department arrived. The plant, which manufactures radios, refrigerators, and airplane parts, was working on several large government orders for airplane radios and parts at the time of the fire.

No Action on Codes Likely During Next 2 Years, ASRE Told

NEW YORK CITY—There has been considerable talk, but little action, on municipal safety codes covering mechanical refrigeration installation and service, and there is little chance that there will be much action taken on such ordinances in the next couple of years, it was revealed at a formal discussion of the "Status of Mechanical Refrigeration Safety Laws in Various Parts of the United States," held at the final technical session of the annual convention of the American Society of Refrigerating Engineers here last week.

"The American Standard Safety Code for Mechanical Refrigeration (sponsored by the A.S.R.E. and approved by the American Standards Association) has been placed in the hands of code-formulating committees and safety officials in 45 cities where refrigeration codes are being considered, but to date no municipality has actually adopted the American Standard Safety Code or its equivalent," declared Carl F. Brooks, secretary, Joint Refrigeration Industry Committee in charge of code work.

"However, on the other hand no other refrigeration codes have been adopted in any city in the United States since its approval and publication in April, 1939."

"We should indulge in as little safety code activity as possible, because the national emergency should demand as much of our attention as possible," declared Harry Edwards, refrigeration engineer who has chairmanned most of the A.S.R.E. activities on codes. "We have more

(Concluded on Page 4, Column 1)

Puffer-Hubbard Moves Plant To Grand Haven

GRAND HAVEN, Mich.—Headquarters of Puffer-Hubbard Mfg. Co., manufacturer of commercial refrigeration display and storage equipment, have been moved to Grand Haven from Minneapolis, reports E. S. Johnson, an official of the company.

The company next year will continue to manufacture and market display cases, reach-in and walk-in refrigerators, and bottle beverage coolers, but has discontinued manufacture of draft beer coolers, dough-retarder units, and portable humidifiers.

Coast Utility To Quit Out-State Selling

SEATTLE—Effective Jan. 1, Puget Sound Power & Light Co. will discontinue the sale of electrical equipment outside of the Seattle area, reports Frank McLaughlin, president. This is in line with the company's policy of turning electrical appliance and equipment sales over to dealers whenever customer acceptance warrants and wherever competitive conditions permit.

The power company will continue to furnish advisory home, commercial, industrial, farm electrification, and dealer cooperative services for the benefit of both customers and dealers.

N. Y. Edison Replaced as Electrolux Distributor

NEW YORK CITY—Effective Jan. 1, distribution of Servel Electrolux gas refrigerators in the New York metropolitan area will be taken over by a newly organized firm, Gas Refrigerator Distributors, Inc., headed by F. E. Sellman, former sales and advertising manager of Servel,

(Concluded on Page 20, Column 2)

3 Companies Set '41 Line Prevues For Next Week

MANSFIELD, Ohio — Annual distributors' convention and merchandising school for distributors' salesmen for the Westinghouse merchandising division will be held here Dec. 12 through 15.

Approximately 200 distributors from all sections of the country are expected to attend the convention Dec. 12 and 13, when plans for 1941 sales and promotion will be outlined.

Annual merchandising school for approximately 400 salesmen working under distributors will be conducted Dec. 14 and 15.

Kelvinator Sessions To Start Dec. 16

DETROIT—Kelvinator's 1941 sales program will be outlined to distributors, branch office executives, and representatives of public utility companies at a four-day convention here Dec. 16 to 19. Convention sessions will be held in the Masonic Temple, and headquarters will be in the Book-Cadillac hotel.

First two days of the meeting will be devoted to a presentation of 1941 products, promotional and advertising plans, and sales training program, with sessions for wholesale salesmen on the third and fourth days.

Norge Plans Series Of Group Meetings

DETROIT — Norge distributors from all over the United States are coming into Detroit during the next two weeks to preview the 1941 models of the Norge Rollator refrigerators, and to participate in a series of sales and merchandising conferences with factory executives.

A departure from the company's distributor convention of former years, the sales conference plan brings the distributors to headquarters in a number of groups, large enough to insure exchange of ideas but small enough to allow adequate time for conferences between individual distributors and Norge executives. Norge 1941 models will be shown, and merchandising plans will be outlined, to each group.

Another feature of the plan is a series of two-day sales clinics for wholesale salesmen and sales managers who accompany their distributors to Detroit.

15% of Dept. Store Employees of Draft Age, Survey Shows

NEW YORK CITY—That the draft may affect a higher percentage of male employees of department and specialty stores than has been generally anticipated up to this time is indicated by a study of store management operations and personnel policies under the national defense program, recently completed by the store management group of National Retail Dry Goods Association.

According to reports from 34 stores with sales volume of \$750,000 and up annually, representing a combined total of approximately 22,000 employees, approximately 15.3% of all employees are eligible for military service, with 8.9% representing men without dependents and 6.4% of men with dependents, whose service probably will be deferred. Earlier estimate (Concluded on Page 20, Column 1)

NRDGA To Consider Appliance Problems

NEW YORK CITY—Problems of major appliance merchandising, including training and compensation of salesmen, display methods, and servicing policies, will come up for extended consideration during the annual convention next month of National Retail Dry Goods Association, according to plans now nearing completion.

The 1941 session on appliances, scheduled for the morning of Jan. 16, again will be under the chairmanship of Philip DuBoff, major appliance buyer for Bloomingdale's, who was in charge of this session at the 1940 meeting.

(Concluded on Page 20, Column 1)

Appliance Dealer Keeps Finger In Many Pies

CHALYBEATE SPRINGS, N. C.—Versatile is the word for R. B. Johnson.

For one thing, Mr. Johnson sells electric washing machines in this little community of some 125 souls—and sells them so successfully that his record shows approximately 90 units accounted for in the past five months.

But that's just one of Mr. Johnson's accomplishments, for he also serves as village postmaster, operates a barber shop, sells groceries and coal, runs a service station, and does a good deal of electrical contracting.

Logan Lewis Is Elected National ASRE President

Spring Meeting of The Society Goes To Cincinnati

NEW YORK CITY—Members of the American Society of Refrigerating Engineers met here last week to discuss the affairs of the society, elect new officers, and to listen and participate in discussions of technological advances in the refrigeration field.

Cincinnati was chosen as the site of the 1941 Spring meeting, with the date to be announced later.

New A.S.R.E. president is L. Logan Lewis, Carrier Corp. First vice president is Dr. William R. Hainsworth, Servel, Inc.; second vice president is Charles R. Logan, Superior Valve & Fittings Co. John F. Stone, Johns-Manville Corp., is treasurer.

New directors elected for three-year terms are Dr. Arthur W. Ewell, Worcester, Mass.; A. B. Stickney, Armour & Co., Chicago; J. H. Ashbaugh, Westinghouse; Frank H. Faust, General Electric

(Concluded on Page 4, Column 5)

Army Contracts Boast Lipman-N.Y. Business

By Robert M. Price

NEW YORK CITY—Lipman-New York Corp., distributor for General Refrigeration Corp., is keeping pace with the national defense program in supplying refrigeration and cooling equipment for a number of army camps and bases in this area.

Recent installations were made at Fort Dix and at Mitchell Field, providing refrigeration storage facilities for large mess halls at these camps. A 2-hp. Lipman compressor and two Peerless blowers provide refrigeration for a vegetable box and a meat box at Mitchell Field, each box measuring 10 x 12 feet. These storage refrigerators supply meat and vegetables for a 1,000-man mess hall.

At Camp Dix two similar jobs were installed to provide food storage for two 1,000-man mess halls.

At Fort Monmouth (N. J.) an air conditioning installation was made in the battery testing room of that base. In testing batteries used in signal corps work at the camp, it was necessary to provide a room

(Concluded on Page 5, Column 1)

A.S.R.E. Inducts a New Leader



L. Logan Lewis (left), vice president in charge of engineering for Carrier Corp., takes office as A.S.R.E. president, receiving congratulations of George Hulse, his predecessor. Mr. Lewis is one of the air conditioning and refrigeration industry's most distinguished inventors and practical engineers.

Frigidaire Sets Up New Branch In Pittsburgh

PITTSBURGH—A new branch office to handle distribution of its product in western Pennsylvania and a part of western Virginia has been established in Pittsburgh by Frigidaire. The newly established branch takes over without territorial change the operations of the Electric Products Co., 5624 Pennsylvania Ave.

This revision in distribution operations was necessitated by the recent death of Al Hattenbach, head of Electric Products, who for 21 years was Frigidaire distributor in this area.

As manager of its branch office, which will maintain administrative and display quarters at 404 North Craig St., Frigidaire has appointed P. K. Abry, who has been associated with the company in various sales capacities. Mr. Abry from 1932 until his new appointment was branch manager of the company's Kansas City office. Before that he had been assistant zone manager, zone manager, and regional manager.

When the A.S.R.E. Met In New York



F. M. Raver (left) of York Ice Machinery Corp. congratulates Henry B. Pownall, an associate at York, upon Pownall's receiving the A.S.R.E. Outstanding Publication Award medal. Frank Zumbro, Frick engineer, looks on at the society's annual convention, held last week in New York.



Prof. F. H. Steining, head of the department of mechanical engineering at the University of Pittsburgh, is a study in intent listening as R. H. Thompson, Kinetic Chemicals, discusses a point about "Freon."

Selling 'Through the Dealer' Rather Than 'To the Dealer'

The Function of the Wholesale Salesman

H. M. Butzloff, author of this series of articles, was formerly sales development manager of the Westinghouse household refrigerator division. Before that he had many years of experience in the field distribution end of the household electric refrigeration business, with Westinghouse, and with the old Stover Co., original Frigidaire distributor in the Chicago area.



As the new lines of refrigerators are about to be introduced, AIR CONDITIONING & REFRIGERATION NEWS believes that this series of articles, which tell how a wholesale salesman can do a better job, is particularly timely. This is the second in the series.

By H. M. Butzloff

Selling Ideas, Not Merchandise

If you were to sit down to dinner in a restaurant and were handed two different menus, which of these descriptions of ham and sweet potatoes would be most tempting to you?

"Ham and sweet potatoes...\$0.55"

Or

"Even your palate will thrill with delight as you feast on this delightful dish."

"Luscious, Mild, Hickory Flavored 'HAM and SWEETS' \$0.55"

"On a sizzling platter with a bowl of refreshing cole slaw. What ham! What sweets! It is not only the effort in the cooking that makes this ham so perfect, but also the tireless organized efforts which follow the life of these Wisconsin porkers from the cradle to the table."

The latter, of course! You can fairly taste this ham from the description of it.

Be an Idea-Man

This is only one sample of what it means to be an IDEA-MAN. Selling ideas about food, and of course backing it up with good food, is what built the business of such organizations as the Triangle Restaurant chain in Chicago.

The greatest need of business today is for more and better ideas. "Yes" you may say, "but that is just the point—where do you get them?" Anyone who is willing to put the effort back of it can be an idea man.

IDENTIFICATION

A principle so fundamental as identification is often neglected in the promotion of the dealer's business. Yet everyone will agree that you must let people know who and where you are.

It is a necessity to let people know at a glance what kind of a business is being conducted in a store as well as what brand of goods is being sold there. People going by the store or standing in front of it must at once recognize the place as selling certain merchandise. In this way the local dealer's store becomes the connecting link between the broad basic advertising of the manufacturer and the eventual purchase of the item.

This identification should be so outstanding that it will indelibly impress on the prospect's mind the dealer's location and business so that whenever a desire for these products is created, the purchaser will simultaneously think of this particular dealer and beat a path to his doorway.

Do the movies get along without signs and identification? They would soon go broke if they did. Do chain stores hide their name under a bushel? No, they blatantly blare forth their business and their wares until everyone in the community knows where they are and what they have to sell.

Yet why are there not more signs and better identification in the electrical appliance business? This is

just another problem for the wholesale salesman.

WINDOW DISPLAY

While it may not be typical, yet it is true that many dealers do not take advantage of the valuable space they have in their windows. Department stores and chain stores regard windows as one of their best advertisements and on the company books actually charge up the space used in the windows as they would charge for space in a newspaper.

In this connection the good, alert wholesale salesman can often be an idea-man to a dealer by bringing to him suggestions for using his window display to attract prospects into his store.

These suggestions may be based on what some other merchandiser has done with his windows in another community. The salesman can often suggest a more effective use of the available material for window decoration. Often by going in and doing the work himself he can sell himself to the dealer.

Most manufacturers now have elaborate displays which are loaned to the dealer for the mere cost of transportation. The alibi of the dealer that he does not have a professional window trimmer is not a good reason why valuable space in the window cannot be used to maximum advantage.

A suggestion that a certain window display has remained in the window for a long time will oftentimes be the motivating force to get the dealer to change it and make it a business getter.

An IDEA-MAN watches these details, because he realizes the value of the dealer's windows to him. He knows that the windows indelibly tie-up the purchaser with the goods the dealer has to sell. He knows that he must catch the eye of the passerby, stop him and create a desire to buy.

He knows that the same window display in the window week after week can do nothing for the dealer in building sales, because it has lost its attractiveness and pulling power. Be an IDEA-MAN by watching the windows of your dealers and seeing that they are creative and fresh.

SHOWROOM DISPLAY

You must make a selling impression on the customers as they come into a dealer's showroom. Are you impressed when you go to a 50-cent movie and see the beautiful spacious lobby with its gilded mirrors and walls and its gorgeous draperies? This is their selling job and they do it that way because they know it pays, even in a 50-cent movie.

An IDEA-MAN can sell himself to the dealer by offering constructive suggestions for improving the display of the products he has to sell.

Here are just a few test questions which an IDEA-MAN can use to strengthen the display of his product:

Is the place neat and clean?

Can the arrangement of the products be made more effective?

Is the display surrounded by proper identification and floor display to make selling easier?

Is the product itself clean?

Is the literature neatly arranged and accessible?

In the case of a refrigerator, is it operating?

Ice frozen?

Dessert frozen?

Vegetables and meat, real or artificial, displayed?

Sliding shelves operating freely?

Could the display be enhanced by mounting it on a platform?

Could a little paint and putty be used to brighten up the display?

How about the kind of lighting necessary to get the most effective results?

Of course, it takes effort to get any of these things done, because the easiest way always is to do nothing.

It costs very little to keep a place clean, use a little paint, or install the kind of lighting necessary. Yet these small items contribute to or even constitute the dramatic showmanship and selling science that is needed to sell products today.

Added to **KRAMER TRENTON**
EFFICIENCY
IS
FINISH
PROTECTION
By Bonderizing

Based on a quarter of a century of accumulated experience in design and construction, the Kramer Trenton Company is contributing advanced ideas in heating and air conditioning for the home, office and factory.

Scientifically designed for top efficiency, the mechanical assemblies are housed in beautifully finished cabinets, that are Bonderized for a long, rust-free life.

Bonderizing supplies an extra quality. Applied under the enamel it provides an absorbent foundation to which the finish will cling. It neutralizes the effects of humidity and protects against rust. Its effectiveness on this type of equipment proves its value on any product where corrosion is a problem.

PARKER RUST PROOF COMPANY
2197 E. Milwaukee Ave. • Detroit, Michigan

Send for the latest book on Bonderizing. It describes what it is—what it does—how it is applied and lists some of the hundreds of manufacturers who use it. In this list you will find some of the greatest names in American industry.

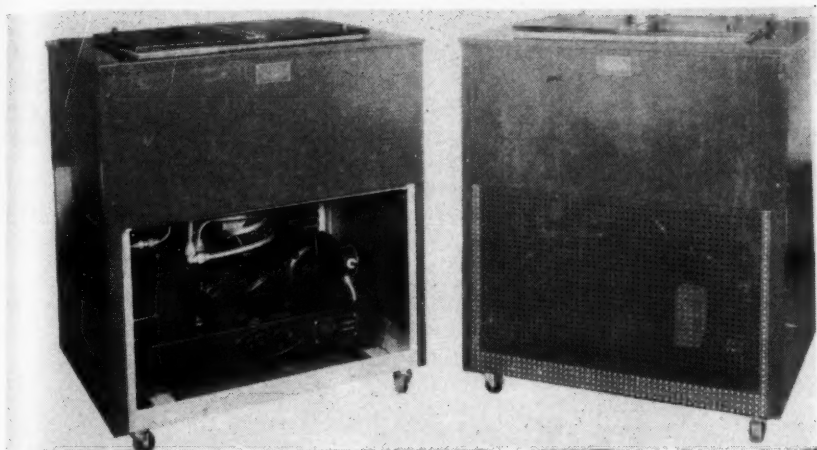
PARKER
Processes **CONQUER RUST**
BONDERIZING • PARKERIZING

SERVEL Silver Fleet

Smooth and silent as a sailboat, Servel's "Silver Fleet" refrigerating machines offer you a standard of operating efficiency that is 3 to 5 years ahead of the field. Ask for the new 72-page catalog. Servel, Inc., Electric Refrigeration and Air Conditioning Division, Evansville, Ind.

COMMERCIAL REFRIGERATING MACHINES

Low Temperature Rivet Cooler Built By Bozman Speeds Defense Program



Built by R. H. Bozman & Bros. of Baltimore and refrigerated by a 1/4-hp. Frick compressor, this specially designed low temperature rivet cooling unit is aimed at speeding airplane production.

BALTIMORE—Refrigeration again serves national defense by speeding the production of airplanes with the development of a low temperature rivet cooling unit built by R. H. Bozman & Bros., Inc., here.

The new unit, used to cool duraluminum rivets, is completely portable, and may be moved from one assembly line position to another on rubber tired wheels.

USES FRICK COMPRESSOR

Powered by a 1/4-hp. Frick compressor the special unit keeps duraluminum rivets well below zero prior to their application to airplane bodies. At this temperature the rivets are soft and malleable, while at higher temperatures they become hard. The metal has characteristics exactly the opposite of steel in this respect.

The low temperature cooler contains a series of perforated metal cans containing rivets of different sizes. Insulation is provided by a shell of 6-inch cork and the body of the cooler contains refrigerant pipes on the sides and bottom. Insulation is further increased by drawing a vacuum between the inner and outer metal shells, which contain the refrigeration pipes.

TWO SIZES OFFERED

Built in two sizes, the special unit is 30 inches wide, 48 inches high, and 63 or 120 inches long. An Alco expansion valve is used to control the refrigerant and no adjustment is necessary in the field.

Orders have been received from one large aircraft concern, and according to R. H. Bozman, head of the company, several other companies producing planes have become interested in the unit.

DRY ICE USED BEFORE

Prior to the development of this unit rivets were cooled with dry ice. With this method, Mr. Bozman asserted, it was difficult to control the actual temperature of the rivets, which made difficulties in plane production.

Mr. Bozman believes that his firm's experience in low temperature refrigeration work will be of great value to the national defense program. The company also makes devices for testing aircraft instruments, recording instruments, and special applications of all kinds.

October Refrigerator Sales Of \$2,107,989 Reported To Dept. of Commerce

WASHINGTON, D. C.—Sales by 261 household appliance dealers reporting to U. S. Department of Commerce for October totaled \$2,107,989, an increase of 12% over those for the same month last year. Sales by all types of firms reporting, numbered 22,591, were 10% higher than in 1939.

For the first 10 months of the year, sales by reporting household appliance dealers were 14% above those for the same period of last year, compared with a gain of 8% for all types of business firms reporting. October sales by the appliance firms were 21% above those for September, compared with a gain of 15% for all types of stores.

I. W. Cotton Named Head Of Indianapolis Air Conditioning Group

INDIANAPOLIS—I. W. Cotton has been elected president of the Air Conditioning Council of Indianapolis for the coming year, to succeed W. F. Freije. Mr. Cotton was a vice president of the organization during the past year.

Other new officers are Telford Davis, vice president, and George Joslin, secretary-treasurer. E. S. Hildreth was secretary-treasurer of the group during the past year.

Committee chairmanship appointments by Mr. Cotton include: W. W. Greer, financial; Russell Gray, membership; J. T. Harden, attendance; E. S. Hildreth, publicity; Ben Paller, program; W. F. Freije, entertainment; and W. P. Whittington, athletic. A newly formed executive committee, composed of N. C. Wade, G. B. Supple, and H. V. Alexander, also has been appointed. General policies of the council

during the past year will be followed during the next year, Mr. Cotton announced, with the exception that a new program chairman for each month's meeting will be appointed.

Present code committee has been enlarged to meet the pressure of additional activities, and now includes Mr. Supple, Mr. Freije, Mr. Greer, Mr. Paller, Edward Ross, E. G. Fowler, T. R. Davis, E. T. Clucas, and Prof. W. T. Miller of Purdue university.

Hallstein Joins McQuay Engineering Staff

MINNEAPOLIS—Harry T. Hallstein has been appointed air conditioning application engineer for McQuay, Inc. here. He will devote his time to field and factory research and development work.

Mr. Hallstein, one-time district engineer for Delco-Frigidaire in Springfield, Mass., comes to McQuay following research work in heat transfer at Purdue university, from which he was graduated in 1932.

\$30,000 Army Contract Is Awarded To Frigid Refrigeration Service

NEW ORLEANS—Frigid Refrigeration Service here has been awarded an installation contract for \$30,000 worth of walk-in coolers, storage coolers, beverage coolers, and kitchen refrigeration for the new military training camp being built at Hattiesburg, Miss.

The Hattiesburg training cantonment, reportedly largest to be erected in the South, will provide barracks for more than 100,000 draftees, and includes air conditioned mess halls, gym, and social halls. Refrigeration provided in the above figure is without machines, representing only equipment.

A new all-electric kitchen to serve 10,000 soldiers was completed recently.

Frigid Refrigeration Service, headed by George W. Mims, is commercial dealer for Westinghouse and refrigeration service engineers.

WHAT'S THIS?

NO WATER JACKET ON THE CYLINDERS?

THAT'S RIGHT!...

YOU CAN DO WITHOUT IT BY USING FREON* REFRIGERANTS!



HERE'S WHY you do not need an expensive water jacket on cylinders and cylinder heads of your compressors to cool the refrigerant gas . . . when you use "Freon-12" refrigerant! "Freon-12" gas develops low superheat and stays well below carbonization temperature of mineral lubricating oil. Its temperature as a compressed gas through the discharge valve, under standard ton conditions, is only 109.5°F. So, naturally, "Freon-12" does not need water jacket cooling!

What this means to you!

By eliminating water jackets you cut the cost of patterns, castings, foundry labor and scrap, machine work, and assembly. You save by ending the need for water connections,

gaskets and other fittings and equipment for the circulation of water through the cored water passages. In addition, you reduce the cost of installation, maintenance, and service. The use of uncured but finned cylinders and cylinder heads for "Freon-12" charged compressors also reduces the possibility of refrigerant leaks from the system, or of water entering the system through thin wall iron castings.

Uncured cylinders for "Freon-12" compressors operate at low temperatures and pressures. They are small in size, light in weight, simple in construction, efficient in operation! They give you low first and maintenance cost and long years of efficient service. So specify them for your next job.

What else do you get with "Freon"?

► Featured on this page is just one of the outstanding advantages you get when you specify "Freon" refrigerants! There are many others. For instance, "Freon" refrigerants are safe. And this harmlessness makes possible still another advantage: "Freon" refrigerants permit use of the newer, more efficient direct expansion system in place of the old-fashioned indirect system, using brine coils.



FREON

REG. U. S. PAT. OFF.

safe refrigerants

*"Freon" is Kinetic's reg. trade mark for its fluorine refrigerants

KINETIC CHEMICALS, INC., TENTH & MARKET STREETS, WILMINGTON, DELAWARE

National Emergency May Put Quietus On Safety Codes

(Concluded from Page 1, Column 2)

important things to command our attention now," he said, "and code matters should remain dormant."

One exception to the apparent disinclination or inability to adopt formal refrigeration safety codes is the case of the city of New York, where a long debated code is now in the hands of the city Fathers and may soon become a law.

In his report on safety codes, Mr. Brooks said in part:

"In most of the cities enforcing refrigeration codes that were written a number of years ago and never revised, the responsible officials now realize that such codes do not provide adequate and reasonable regulations for present-day equipment.

"Through necessity, these old codes are now in the process of revision and in some instances local code authorities have chosen to establish new safety regulations that are in substantial agreement with the American Standard Safety Code for Mechanical Refrigeration, ASA B9-1939, sponsored by the A.S.R.E. and approved by the American Standards Association.

"Many building codes in cities throughout the United States are now under revision and reports indicate that many new codes are to be adopted. In this connection, a number of cities (25 reported) are planning to adopt a safety code for mechanical refrigeration to be included as a section or part of building codes. The American Standard Safety Code for Mechanical Refrigeration has been placed in the hands of code-formulating committees and

safety officials in 45 cities where refrigeration codes are being considered.

"The need for the standardization of mechanical refrigeration equipment and uniformity of safety regulations for its installation and operation is being met in the Dominion of Canada as well as in the United States.

"A Canadian Code (C.E.S.A.B52-1939) for mechanical refrigeration was approved and published by the Canadian Engineering Standards Association in October, 1930. Except for a very few minor differences, the Canadian Code is in substantial agreement with the American Standard Safety Code for Mechanical Refrigeration. This safety standard is being considered for adoption by the provinces and it is hoped that it will be adopted as the Standard Inter-Provincial Code for Mechanical Refrigeration.

"The introduction of State Bills relating to refrigeration and air conditioning is a comparatively new development. Within the last two years 38 proposed State Bills were introduced throughout the United States in State Legislative sessions.

"From the total of 38 bills reported, five have been passed or ratified as State Laws, as follows:

"Delaware—controlling the construction of air conditioning equipment.

"Iowa—licensing of refrigerated locker plants.

"Minnesota—licensing of operators and inspection of all plants over 50 hp.

"North Carolina—amendment to State Law for licensing plumbing and heating contractors, to include contractors installing air conditioning systems.

"Wisconsin Cold Storage Act—providing rules and regulations governing the licensing and operation of frozen food locker plants, prescribed by the Wisconsin State Department of Agriculture."

'Passenger Car' and 'Truck' Elements In Air Conditioning Don't Mix, Says Murphy

Contracting and Selling Divisions Must Work Separately

By Henry Knowlton

BALTIMORE—Sales of air conditioning and commercial refrigeration must have a 35% markup to constitute a profitable operation in the opinion of J. J. Murphy of Maryland Refrigeration Co., York Ice Machinery Corp. distributor for this city.

Mr. Murphy refers to sales made through a merchandising organization, where it is necessary to cover the cost of salesmen, sales management, advertising, promotion, and other attendant expenses. He does not embrace the "contracting" type of air conditioning firm or department in this category.

THE GROSS MARGINS

An analysis of the business done by the Maryland company in recent years shows that on the average, commercial refrigeration sales show a gross profit of 32.2%; commercial specialties, such as counter freezers, 34.9%; and air conditioning, 21.7%.

Mr. Murphy has found that his gross operating overhead is 22% on the overall volume of business handled and feels that while air conditioning adds to the company's volume, it is unprofitable, considered as an independent department.

When asked why he thought this situation exists in the air conditioning business today, Mr. Murphy offered an interesting explanation.

"Air conditioning is gradually dividing," Mr. Murphy said, "into a 'merchandising business' in the lower tonnage and package lines, and into a 'contracting' business in the heavy tonnage classes.

"As I have analyzed it," Mr. Murphy continued, "neither branch, or division, if you could call it that, of this industry is content to let the other branch go along in their own way and make some money.

THEN COMES BIDDING

"What happens is this. The merchandising dealer or distributor selling package equipment sees a fair sized job come along and cannot resist the temptation to bid on it. He does not understand the risk involved in a heavy contract, and all the elements which must be included in the final price. Because his estimate is not based on sound experience and knowledge of the heavy contracting business, he may be low. On this kind of work one large job may force a small operator to the wall.

"On the other hand the 'merchandising dealer' sends a salesman out who creates a new prospect—some one who becomes interested in the idea of air conditioning his store through that salesman's efforts. When the prospective owner calls for other bids he will get certain

ones that carry the same general overhead figured by the 'merchandising' firms, but he will get others from contractor firms who cannot resist the temptation of picking off a small job that is ready to go.

"In this case the contractor type firm is low—because—and rightly enough, this type of organization has not figured in the cost of selling and promotion. The job is picked off by an organization that has done nothing to create new business."

Mr. Murphy feels that if the air conditioning business is to become profitable, the two general types of organizations in the field today will have to start keeping out of each other's way. He is optimistic enough to believe that both kinds of organizations are gradually learning that it is not profitable to play in each other's yard, and that the situation will finally straighten itself out.

SUFFICIENT MARGIN

Many firms, Mr. Murphy observes, now operate two separate departments for the two types of air conditioning and are successful in doing it. The "engineering and contracting" department can operate on an overhead (gross) of say 22%, and make money. The package equipment department can get 33 to 35% and also make money.

In Mr. Murphy's opinion, the two branches of the business do not mix—either in one organization, or in open competition in the field.

"Those in the 'passenger car' type of air conditioning must sell the idea—the gadgets and appeal to a broad market. Those in 'truck' air conditioning can talk to the owner on cost per ton mile—or rather its equivalent. Both have plenty of selling points—both are absolutely right," Mr. Murphy said. "They simply are not the same type of business."

With some 75% of the department stores air conditioned in Baltimore, and most hotel public rooms and theaters now equipped, Mr. Murphy is looking to packaged air conditioning as the answer to a greater volume of business.

Certain building code regulations have hampered the use of this type of equipment in some instances, he feels, but believes that it will be responsible for the ultimate success of the industry.

Along with York air conditioning and commercial refrigeration equipment, Mr. Murphy offers his customers a "maintenance" contract which costs 2% of the original equipment contract on jobs running over \$1,000. He has found that it is possible to give good service and keep the equipment in order for this amount per year.

Steenstrup Tells ASRE To Plan Products For 'After Defense'

(Concluded from Page 1, Column 5)

Co.; Dr. Donald K. Tressler, New York State Experiment Station; Charles S. Leopold, Philadelphia consulting engineer.

At the luncheon on the opening day the engineers heard Christian Steenstrup, who developed the original General Electric "Monitor Top" household refrigerator unit, urge engineers to think ahead to the day when the American rearmament program will be complete.

It will be the duty of engineers, Mr. Steenstrup said, to have new developments ready at that time to provide new industries and employment for America's workers.

TECHNICAL SESSIONS

In the technical program the engineers heard a varied program, covering research, plant, and field engineering progress. The report on safety code progress is reported in another story on this page, a report on methods of obtaining high humidities and a discussion of silica aerogel as a commercial insulator is also to be found in this issue. Other papers will be reported upon in future issues.

Mr. Lewis, the society's new president, is vice president in charge of engineering, Carrier Corp. He is credited with inventing the by-pass system of air conditioning which revolutionized cooling and ventilating systems in theaters throughout the country.

LEWIS A KENTUCKIAN

Born in Clark County, Ky., in 1887, Mr. Lewis received his B.M.E. degree from the University of Kentucky in 1907, and his M.E. in 1909. From 1907 to 1909, he served as an instructor at Kentucky.

He resigned his post at the university in 1909 to join Willis H. Carrier.

In 1915, he was made chief engineer of Carrier. Mr. Lewis was responsible for the air conditioning system installed in Grauman's Metropolitan theater (now Paramount), in Los Angeles. Prior to that time, air conditioning practice, in all but a very few, small theaters, had called for upward systems of air distribution, in which cold air was delivered through mushroom ventilators under seats. This resulted in "cold feet," a universal annoyance to the paying patrons in the movies at that time.


PIONEERED THEATER JOB

Mr. Lewis' pioneering installation in Grauman's theater is regarded today as a milestone in the air conditioning industry, making the beginning of public consciousness of the benefits of comfort conditioning. It was the first theater in which the by-pass was applied and the overhead system of air distribution used.

REFRIGERATION TUBING

MACHINE WRAPPED

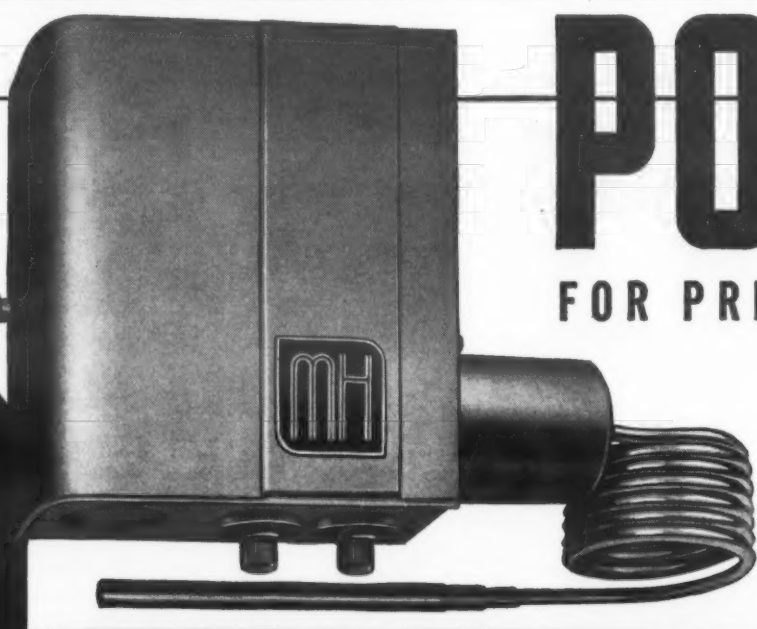
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PENN BRASS & COPPER CO., INC.
ERIE, PA., U.S.A.

The New

A SINGLE Simple CONTROL THAT MEETS EVERY NEED



POLARTRON

FOR PRESSURE CONTROL UP TO 1 H.P.A.C.

Eight Series 40 Polartron Advantages

Separate "On and Off" Knobs ★ Universal Range ★ Capillary Pressure Connections ★ Fewer Models to Stock ★ Minimum Free Service ★ "Cooling Control" on Cut Out or Cut In ★ No Short Cycling ★ Polartron Equipped Compressors can be Converted to Produce Frost-Free Constant Cold

MINNEAPOLIS-HONEYWELL

MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

2807 FOURTH AVENUE SOUTH, MINNEAPOLIS, MINNESOTA

CANADIAN PLANT: TORONTO. EUROPEAN PLANT: LONDON. COMPANY OWNED BRANCHES IN 49 OTHER CITIES

REFRIGERATION Control

In New Frigidaire District Posts



BEN MARKUS
District manager, Milwaukee.



EDGAR CARMEL
District manager, New Orleans.



H. L. MCGURK
District manager, Ft. Worth.



R. C. GOLT
District manager, Kansas City.

New Milwaukee Office To Be Opened Jan. 1

DAYTON, Ohio—Five changes in district executive personnel and the establishment of a new district headquarters in Milwaukee have been announced by Frigidaire.

H. L. McGurk, formerly associated with Frigidaire's overseas export division, has been named manager of the company's Ft. Worth office to replace W. G. Jennings, who requested a leave of absence after being called to active military service. Edgar Carmel, until recently branch manager in Paris, succeeds R. C. Golt as district manager at New Orleans.

Mr. Golt has been transferred from New Orleans to Kansas City, Mo., where he has succeeded P. K. Abry as district manager. Mr. Abry has been named manager of the newly established Pittsburgh branch. (See story on page 1.)

In a realignment of territory north of the Wisconsin-Illinois state line, Frigidaire has established a new district office in Milwaukee. Appointed as manager of the new office, which opens officially on Jan. 1, is Ben Markus, who has held a sales managership for outlying territory covered by the company's Chicago office.

N.Y. Lipman Corp. Awarded Army Camp Contracts

(Concluded from Page 1, Column 5)

A 3-hp. self-contained Lipman room cooler, heating controls, and cooling controls were installed in the room to maintain inside temperatures of 70° to 75° F., with relative humidity of from 30 to 50%. Outside temperatures range from 95° in summer to 0° in winter.

At the present time, the firm is working on an installation at Camp Upton. This installation will be similar to those at Fort Dix and Mitchell Field.

Named G-E Dealer

OLANTA, S. C.—H. S. Tomlinson has taken on the General Electric line of major appliances here.

'Shel' Myers Transferred To Philadelphia Area

PHILADELPHIA — Sheldon F. Myers has been appointed sales development manager of the Middle Atlantic merchandising division of Westinghouse Electric & Mfg. Co. with headquarters in Philadelphia.

Until his transfer, Mr. Myers was sales development manager of commercial refrigeration and air conditioning at East Springfield, Mass.

G-E Utility Conference To Be Held Jan. 2 & 3

BRIDGEPORT, Conn.—The thirteenth annual conference of electric utility company executives, sponsored by the appliance and merchandise department of General Electric Co., will be held Jan. 2 and 3 at the General Electric Institute here. Lawrence Jennings, eastern central station sales manager, is in charge of the conference at Bridgeport.

'Speed Queen' To Drop Refrigerator Line

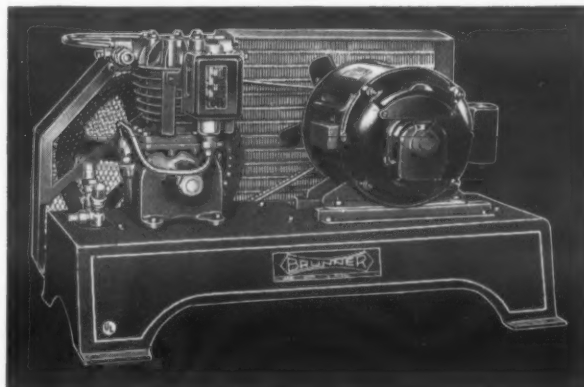
RIPON, Wis.—Marketing of the "Speed Queen" electric refrigerator will be discontinued by Barlow & Seelig Mfg. Co. at the end of the present season, reports L. W. Ryder, general sales manager, to permit the company to concentrate on the merchandising of washers and ironers. The Speed Queen line had been manufactured by another firm.



Far-flung vegetable gardens move into the neighborhood—THANKS TO BRUNNER

● Yes, from her neighborhood grocer, Mrs. Homemaker can now reap abundant harvests of garden-fresh vegetables as well as fruits. Brunner refrigeration sees to that. Kept under uniformly correct temperatures, these foods are wholesomely fresh—and look it. They appeal to the customer's buying eye—just as they appeal to family appetites. ●●● Thus it is that "refrigeration minded" merchants are stepping ahead in sales volume. For there's nothing like an up-to-date vegetable and fruit department to attract business. And besides this stimulant to trade, Brunner refrigeration helps lick that old problem of food spoilage. ●●● Brunner Condensing Units are ideally built for just this

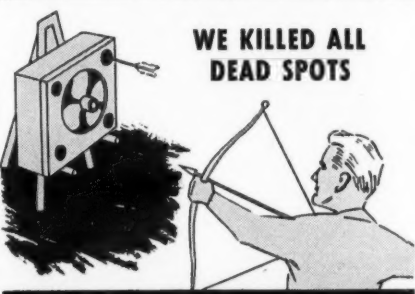
kind of sales-creating service. From the ground up, every Brunner is a thorough-going commercial unit designed for exacting commercial applications. That, naturally, means a rugged, extra-heavy construction... oversize castings for example... bronze bearings at all rotating points... extra-large cooling fin areas... more abundant use of copper... heavy duty motor. Every Brunner detail represents long-time dependability! And every Brunner has Underwriters' Laboratories approval and carries the U. L. Seal. ●●● The Brunner line includes air and water cooled condensing units from 1/4 to 25 tons of refrigeration. Data sent upon request. Write: Brunner Manufacturing Company, Utica, N. Y., U. S. A.



BRUNNER

FOR YEARS THE SYMBOL OF QUALITY

Visit Brunner—Booths 339-340 at the All Industry Refrigeration and Air Conditioning Exhibition, Stevens Hotel, Chicago, January 13-16



WE KILLED ALL DEAD SPOTS



Improved "Pull-Through"

Design . .

The Outstanding Feature of the New Model 1941

MARLO UNIT COOLER

The full coil surface is evenly effective. No more dead spots—"Pull-Through" does it!

All aluminum construction—Cast End-Frames.

Full range of sizes.

Venturi Fan Ring—Quiet Operation.

Suitable for comfort cooling applications.

See it at the Show, in January.

MARLO COIL COMPANY

6135 Manchester Avenue, St. Louis, Mo.

Refrigerating Equipment Manufacturers

Distributor-Dealer Doings

'Cap and Skillet' Club Formed By Frigidaire As Range Sales Aid

DAYTON, Ohio—Most recent addition to the ranks of the brotherhood who know their way around an all-electric kitchen is the "Order of the Cap and Skillet," established by Frigidaire with an eye to more effective electric range salesmanship, and designed eventually to encompass its entire national organization, from the vice president to the salesman in the smallest dealership.

Fundamental purpose of the new order is not to train salesmen to be good cooks, but rather to enable the salesman to demonstrate in a practical and understandable way how good results may be obtained with an efficient electric range, even though the user may not be a proficient cook.

So that every member of the Frigidaire sales organization would have an opportunity to be a member of the "Order of Cap and Skillet," the instruction course began with home office sales executives, division sales managers, and their assistant sales managers. Branch office and distributor sales personnel next were initiated into the "brotherhood." District representatives included in this latter group took the instruction course into the field and presented it to dealers and salesmen. Every individual must pass a two and one-half hour range operation test and oral quiz before he is a full-fledged member of the order.

Preparation of a variety of foods is a vital element in the instruction program. Every man who takes the test either prepares or aids in preparation of a vegetable luncheon in the Frigidaire electric range "Thermizer" well cooker; bakes a batch of biscuits; cooks peas with controlled heat on a surface heating unit, and broils a steak to his individual taste.

Following this portion of the examination, each man is subjected to an oral quiz period covering fundamental advantages and clarifying their importance, in relation to cooking problems, in the minds of each person taking the examinations.

What are termed "Pantomime Problems" also are included in the quiz period curriculum. Each man is given some common daily cooking problem and asked to show, by using some range feature, how the problem is solved by the range user.

As a part of the program at each initiation, a chef's cap and apron are provided for each man taking the test. These garments not only serve to provide an atmosphere of culinary endeavor, but offer protection for clothing. When men beat flour and other ingredients, it's a case of "let the spots fall where they may."

When each man passes his examination successfully, he is given a copy of the instruction book used in the test, and a small gold lapel emblem designed to resemble a tiny skillet.

Middleman Forms Own Appliance Dealership

BALTIMORE — William Middleman, one-time sales manager of Simon Distributing Co., Hotpoint distributor in the Baltimore-Washington territory, has re-entered the appliance field, this time as owner of Waverly Music Shop, 3305 Greenmount Ave. Appliances handled include Frigidaire and Westinghouse refrigerators.

Special: Free Plane Ride With Every Purchase

SUMTER, S. C.—Billy Lynam, junior member of Lynam Electric Co., General Electric dealer here, and an expert pilot, recently bought himself a new plane and decided to use it to good advantage in boosting the company's business.

So for a limited period of time the company is offering, as a special inducement, a free plane ride over the Santee-Cooper project and back for every purchaser of a range, refrigerator, or water heater.

Prospects Are Voters In Pittsburgh 'Election'

PITTSBURGH—A timely "election" tie-in was used successfully to promote Crosley gas ranges in this territory during the month preceding the national election. In the campaign, sponsored by Anchor Distributing Co., Crosley distributor, housewives were invited to "vote" for and comment on the features they liked and wanted in cooking equipment.

Prizes for both contestants and dealers' salesmen were used to add incentive to the campaign, which was backed up with a strong newspaper, radio, and window display program. Distributor field men co-operated with dealers in western Pennsylvania, northern West Virginia, eastern Ohio, and western Maryland in their efforts to roll up volume sales during the drive.

Westinghouse Forms New Western N. Y. Outlet

BUFFALO — Westinghouse Merchandising Distributors, Inc. has opened offices and salesrooms here for the wholesaling of Westinghouse major appliances. The new organization occupies the building at 81 West Mohawk St.

Edgar B. Ingraham, vice president and general manager, who for more than twenty years has been associated with Westinghouse in upstate New York, is in charge of the new offices. Lee Wells, for the last eight years merchandising supervisor for Westinghouse appliances in the Buffalo area, is in charge of sales. The new organization will distribute merchandise in six western New York counties and north Pennsylvania.

New Coast Service Firm

SAN DIEGO, Calif.—Young's Refrigeration Service has been opened by Paul R. Young at 2235 Fern St. here.

Graybar Will Distribute Hotpoint In Des Moines

DES MOINES, Iowa — Graybar Electric Co., Inc. here has been appointed distributor for all Hotpoint home appliances in the Des Moines area. This territory was formerly served by Electric Supply Co., Inc., Des Moines.

Thomas Hunter Elected Essex League Head

NEWARK, N. J. — Thomas M. Hunter has been elected president of the Essex Electrical League for next year. Other officers of the association are Edward Heidt, vice president; Joseph Buhl, treasurer; and James H. Stapleton, secretary.

Named Store Manager

DALLAS, Tex.—Joe Rutland is the new manager of the A. Harris & Co. appliance store here.

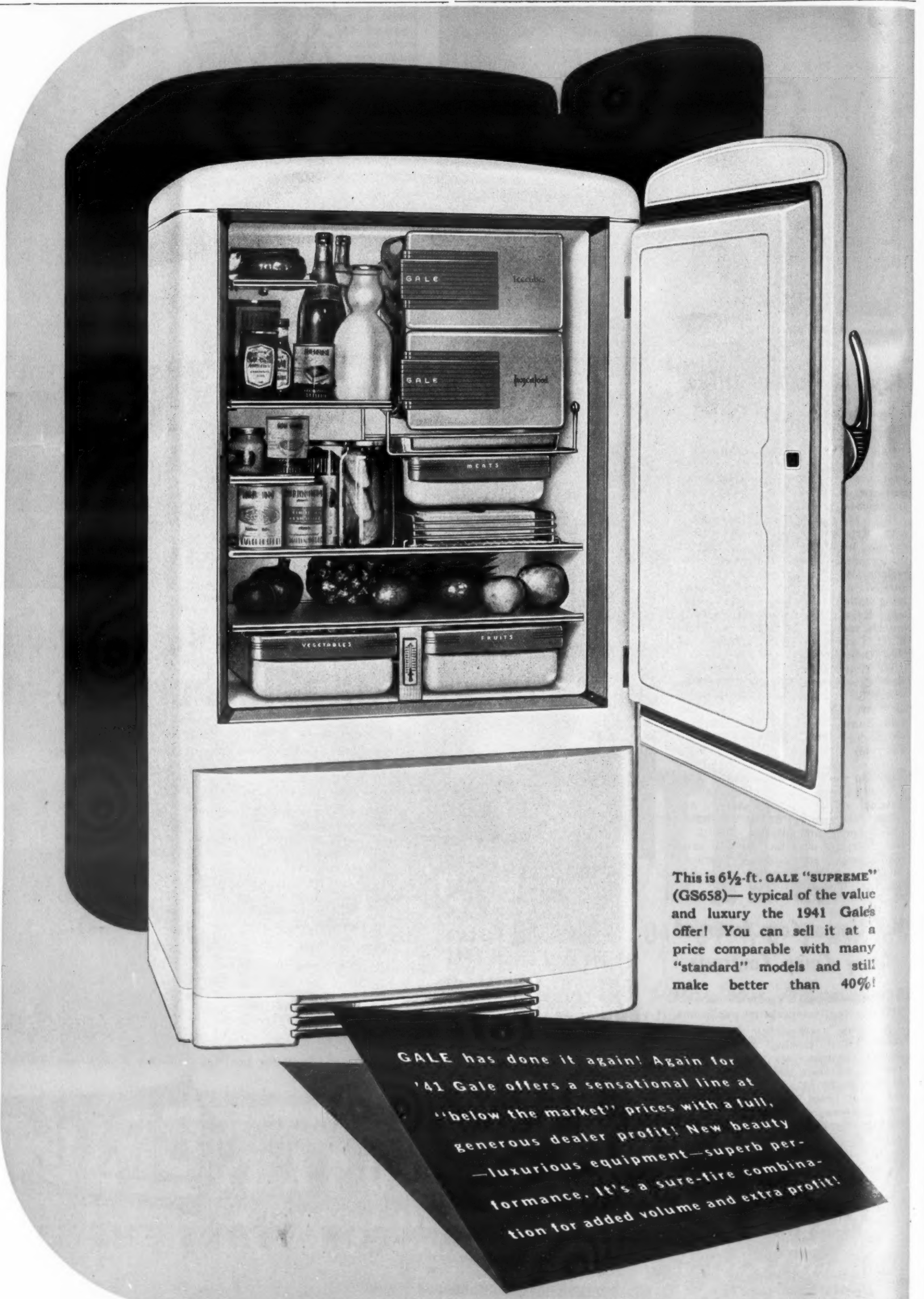
Carolina Dealer Sales Pass 12,000 Units

RALEIGH, N. C.—Dealers in the territory of Carolina Power & Light Co. sold during the first nine months of this year a total of 12,422 electric refrigerators to the power company's 134; 3,221 electric ranges to the utility's 302; and 986 water heaters to the power company's 205.

Utility sales in all other major appliances were negligible, while dealers accounted for 59 air conditioning units, 27,833 radios, 1,419 vacuum cleaners, 4,476 clothes washers, and 21 dishwashers.

Buffalo Dealer Expands

BUFFALO—Schwegler Bros., Inc., electrical appliance dealer, has taken a long-term lease on a four-story building in 72-76 East Huron St. The building contains about 25,000 square feet of floor space and will be used as a warehouse and for the servicing of electrical appliances and other equipment.



This is 6½-ft. GALE "SUPREME" (GS658)—typical of the value and luxury the 1941 Gales offer! You can sell it at a price comparable with many "standard" models and still make better than 40%!

GALE has done it again! Again for '41 Gales offers a sensational line at "below the market" prices with a full, generous dealer profit! New beauty—luxurious equipment—superb performance. It's a sure-fire combination for added volume and extra profit!

New Machine Housing - - In the Steeple

NEW ORLEANS—Silenced nearly 20 years because it conflicted with one modern invention, a huge bell which has hung in the steeple of the Coliseum Place Baptist church here for 86 years, has just been removed from the church tower to make way for another advancement.

The church began broadcasting its services in 1921, and tolling of the bell was suspended when it was discovered this interfered with the radio system. It has remained silent since.

Second modern invention to invade the domain of the nearly-century-old bell is air conditioning apparatus. Deacons of the church recently voted to air condition the building, and it was found that the steeple was the best place to place the cooling motors and other equipment.

Accordingly, the huge bronze bell was hauled down from the belfry and sold for \$75 for junk. It had rung out the start of the Civil War.

Any of 'Em Can Do the Job



Messrs. Hawkins, Sutherland (department manager), Cate, and Cummings of the Danforth Co. air conditioning department go over some plans for a proposed installation. Actually, this sort of conference would probably not happen very often, as each salesman in the air conditioning department is an engineer, and does the whole job of estimating and drawing plans for the job.

Danforth Salesmen Are All Engineers, But They Push Trend To 'Package' Units

By Henry Knowlton

PITTSBURGH—Packaged air conditioning equipment now accounts for approximately 80% of the jobs sold by the Danforth Co., Westinghouse distributor here. W. C. (Bill) Sutherland, manager of the firm's air conditioning department asserts that each year brings an increase in the volume of unitary equipment. This includes, of course, "central station" packaged units running up to 25 tons.

To augment the line of Westinghouse "Mobilier" units now sold the Danforth Co. has become distributor for the "Silentaire" line of window ventilators, manufactured by the Berger Mfg. Division of Republic Steel Corp.

J. Norman Riley, formerly associated with the Standard Air Conditioning Co. branch in Pittsburgh, has recently joined the Danforth

organization and will head up the room cooler and window ventilator department.

Other divisions of the Danforth organization are the appliance department, headed by Robert G. Eckhardt, general manager; commercial refrigeration, headed by Robert Caswell; and the stoker department managed by Bernard Caulfield. The firm handles the Westinghouse domestic refrigerator as a distributor, and sells Westinghouse commercial refrigeration and Winkler stokers.

Typical of the many installations of "packaged" air conditioning made by the Danforth Co. this year is a job in the downtown office of Transcontinental & Western Airlines, Inc. In this instance a SU-135-3½-ton unit was recessed in a closet space and connected to the office by means of a duct running across the back. Two outlet grilles



H. W. Morrow and the 3¾-ton Westinghouse unit which cools the TWA airline office.

provide conditioned air to the space and one return is used.

Access to the unit is obtained through two large doors on the front of the closet which are finished to match other woodwork in the room. Control is by means of a single thermostat.

Because customers of TWA are encouraged to relax and smoke while arrangements are being made for airline travel, the air conditioning system provides an unusual amount of fresh air at all times. Out of the total of 1,600 c.f.m. handled by the unit, approximately 1,000 c.f.m. is outside air.

A similar installation was made by the Danforth Co. in the personal loan room of the Colonial Trust Co., in Pittsburgh. According to Mr. Sutherland this job was purchased solely for the comfort of the bank's customers.

Mr. Sutherland feels that the air conditioning business is due for a decided upswing because of the new interest of many industrial firms in employe relations. He cited installations at the Irwin plant of the Carnegie Illinois Steel Co. (made by Carrier) in the shipping department and in one clerical office, as examples.

The air conditioning department of the Danforth Co. is now made up of seven men, of which five hold M. E. degrees. Each man does his own preliminary layout work, and most of his own estimating. The group of "sales-engineers" working with Mr. Sutherland are responsible for their own jobs, from the beginning of the sale, until the job is finished.



Robert Caswell, Danforth commercial refrigeration sales manager, demonstrates a beer cooler.



• **Extras** in beauty—in equipment—in performance—in quality, for the buyer!

And, each one means extra, easier sales and extra profit for you! No matter what refrigerator you may be selling now, you'll find greater opportunities—more profits with Gale. Get the facts—judge for yourself. *Judge by comparison!*

Extra Efficiency

New mechanical improvements put Gale another jump ahead! All 'Mechanical Iceberg' units are hermetically-sealed. All have the unique Gale Equalizer. And, now,—the greatest mechanical improvement in years—exclusive with Gale—the new 'FLUID-COOLED' STATIC CONDENSER cools during the "OFF" cycle . . . no fan—no moving parts!

Judge for Yourself

BUT—don't "hand down" your decision until you've compared! Compare value—compare features—compare quality and performance—compare prices and profits! Get the facts on Gale NOW.



GALE PRODUCTS
Refrigeration Div., Outboard Marine & Mfg. Co.
GALESBURG, ILLINOIS

GALE Products,
1635 MONMOUTH BLVD.,
GALESBURG, Illinois.

Gentlemen:

Without obligation, I want the whole story on Gale for 1941. Rush information.

NAME _____

ADDRESS _____

CITY _____ STATE _____

AIR CONDITIONING & REFRIGERATION NEWS

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Established 1926 and registered as
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F. M. COCKRELL, Founder

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Household Market For 1941 To Be Localized

RECORD-BREAKING sales of household electric refrigerators during the first 11 months of 1940 have led some people to wonder whether or not the industry has reached its peak this year.

"What of 1941?" they ask. "Isn't the market getting pretty well saturated? Can we not expect a decline from now on?"

In answer, market analysts connected with some of the most important manufacturers in this field pooh-pooh the idea of early saturation, and a slowing down of the sales pace. They are advising their employers to go ahead with plans for expansion, and predicting that 1941 sales figures will be well ahead of those for 1940!

Estimates on 1941 Sales Begin at 2,750,000 Units

Estimates heard in recent days run from 2,750,000 to 3,500,000 as the number of household refrigerators which will probably be sold during 1941. That's a lot of refrigerators—enough to tax the capacity of every plant in the country now devoted to household refrigerator production (during the spring selling season).

Several manufacturers claim that in the spring of 1940 they could have sold thousands more units if they had had the capacity to fill orders within a reasonable period of time. Some of them have taken steps to enlarge their production facilities so that they need not be forced to turn away business next spring.

Who's Going To Buy All These Refrigerators?

But who is going to buy all these refrigerators? Answer: Hundreds of thousands of people who have always wanted them but never had the wherewithal to buy them before. The business boom that is now getting under way will benefit most of all families in the low income

brackets. Steady jobs, no layoffs, higher wages, overtime—all these mean extra cash, and extra cash is going for items long wanted during the late unlamented depression days.

Certain Cities Will Have Biggest Buying Power Gains

These same keen analysts declare that although the rising tide of good business will be noted in almost every community in the land, there are a few cities in which it will really provide an upsurge in large-unit retail sales. Such cities are those which are receiving the bulk of the defense contracts.

In this category are Philadelphia, Detroit, New York City, Los Angeles, Cleveland, Cincinnati, Norfolk, San Francisco, Nashville, Pittsburgh, and other cities of somewhat lesser consequence in the rearmament program. These are the cities where the welfare rolls are dwindling, where the dinner pails are filling, and where the factories are running two and three shifts.

Some Manufacturers Plan To Concentrate Advertising

In view of this observation, some manufacturers are considering placing more of their advertising in newspapers in these "defense boom" cities, rather than scattering their shots in so much magazine advertising.

As new plants are erected in strategically safe midwestern cities—such as Indianapolis, St. Louis, Kansas City, and Omaha—it may be expected that they, too, will share in the predicted great lift for large-unit retail sales.

Predict All Time High For Electric Range Sales

Incidentally, the market analysts are also predicting an all-time high for electric range sales in 1941. As a matter of fact, they expect the percentage of increase over 1940 sales to be considerably greater for ranges than for refrigerators.

The experts are not particularly bullish on washing machines and vacuum cleaners for 1941 (although they do expect some increase). However, the appearance of a few new automatic laundry machines—competitive to the Bendix—is hailed as an opportunity to increase dollar volume and profit margins in this skimpy business.

Appliance dealers can surely count on plenty of business this coming year on their two major items—refrigerators and ranges. Fortunately, there's still some profit left in the sale of both items.

LETTERS

An Example of Our Favorite Letter

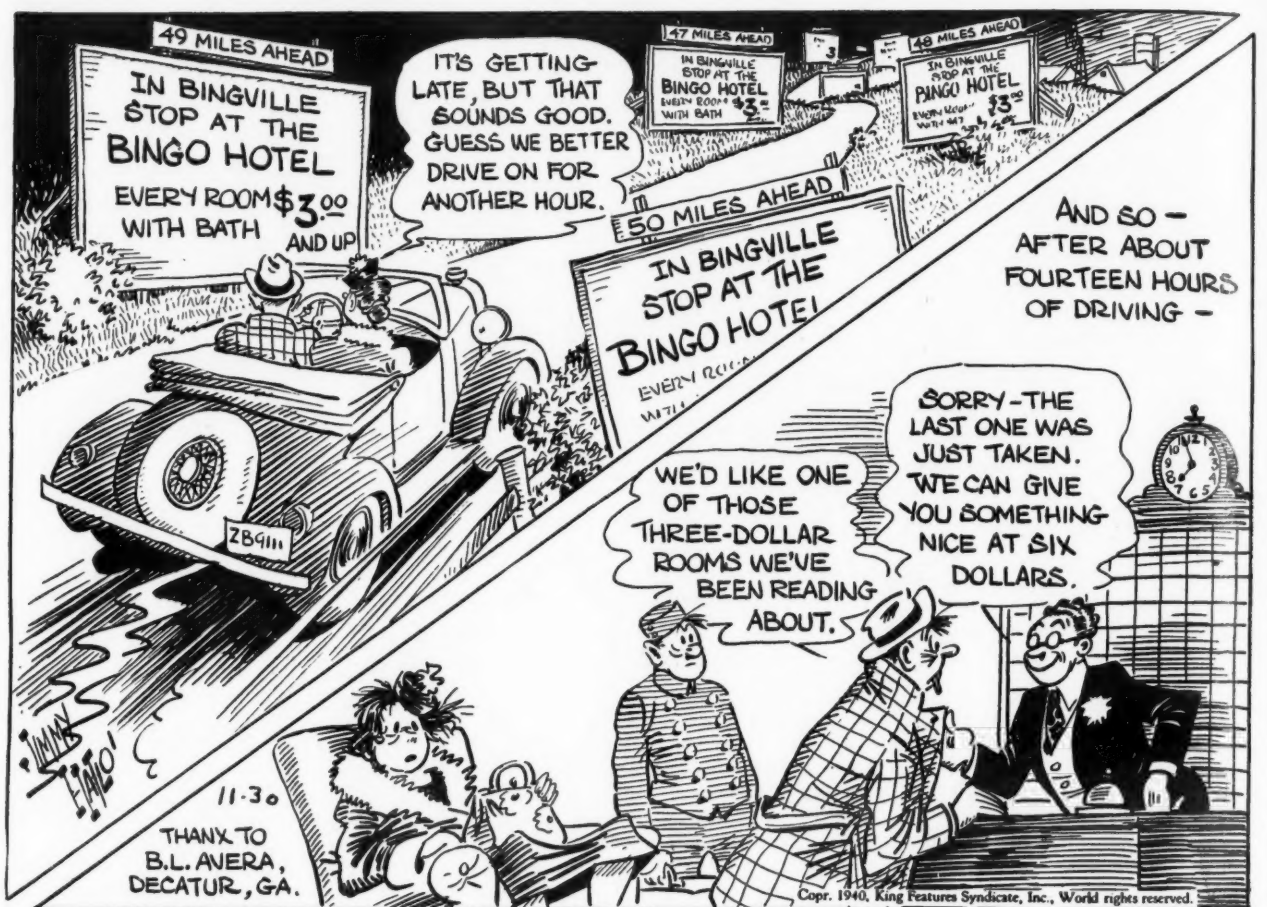
Standard Co., Inc.
152 N. Main St., Fall River, Mass.

Subscription Dept.:

Kindly continue to send us your publication. It has been extremely helpful in the past.

STANDARD CO., INC.

They'll Do It Every Time . . . By Jimmy Hatlo



Sam Vining, Robin Adair, & the Bible

Blessed be the Lord, who daily
loadeth us with benefits . . . Ps. 68:19
799 Ashland Ave.
Buffalo, N. Y.

Dear Mr. Taubeneck:

Your records will show that for some few years back I have been a consistent reader of the News. Personally, I have enjoyed every edition and have especially appreciated the sincerity of Mr. Cockrell and yourself in publishing and advertising the best there is in the trade.

Recently I have been gathering a few notes from the energetic Mr. Sam Vining and it is his recent article in the Oct. 30 issue that I propose to write you about. In a rather suggestive way Mr. Vining has stated that God's word is a history book. Perhaps he should read Isa. 5:24 and Heb. 5:12 in the "Revised Version" of the Bible. Regarding the affair of David and Goliath, the full account of the slaying in my "Revised Version" is in I Sam. 17. Further scriptural records regarding the slaying of Goliath by Elhanan found in II Sam. 21:19 and I Chronicles 20:5 state that Elhanan slew Lahmi the brother of Goliath. Furthermore, if we scan through the book of II Samuel we can easily see that David was an elderly man when Elhanan slew Lahmi and according to I Sam. 17 David was but a boy at the killing of Goliath.

It is very apparent to me that Sam Vining is not the man to teach us about the Bible, for his thoroughness is very much lacking. In these days of unrighteous suffering and great world problems we need men like Sam Vining to uphold and profit by God's word and not to tear down by fancy statements of its incorrectness.

God's word has taught me the way to live and I know that David and Solomon got results because they trusted in God and His word and He motivated their ways. Psa. 119:105, David's song; I Kings 8:23, Solomon's prayer; "Revised Version."

I am sorry to have burdened you with this long epistle but I considered it necessary to write both you and Mr. Vining of the outstanding whole truth in my Bible of God's word, which is the same Revised Version of Sam Vining.

ROBIN W. ADAIR

Bottled Gas Group Registers Protest

Liquefied Petroleum Gas Assn., Inc.
11 W. 42nd St., New York, N. Y.

Dear Mr. Taubeneck:

The editorial in the Oct. 2 issue of AIR CONDITIONING & REFRIGERATION NEWS, entitled "Bottled Gas Competition," has been brought to my attention. There is one statement in this editorial which I feel should be brought to your attention so that the association may be placed on record.

The editorial states "During the last few years the National Association has recommended that these charges be uniformly set at \$9.75 for the systems which are installed with either one or two drums above the ground." Elsewhere in the editorial reference is made to a "National organization, the Liquefied Petroleum Gas Association." Consequently the

reference first quoted would be construed to refer to this Association.

The Liquefied Petroleum Gas Association has never concerned itself with what might be termed the commercial phase of the industry's business, consequently it never made any recommendation for uniformity in installation charges, much less to suggest a figure at which such charges should be set.

The fact that we are not commenting in this letter upon any other statement contained in the editorial should not be construed to indicate our agreement with them. There are a number of instances in which we could take exception to statements in the editorial. However, we realize that it was written for the benefit of a competing industry.

F. R. FETHERSTON,
Secretary

Moisture Problem At Panama Canal

General Delivery
Cristobal, Canal Zone
Nov. 14, 1940

Editor:

Please find enclosed coupon from AIR CONDITIONING & REFRIGERATION NEWS and ship Manuals as checked.

In addition to the Manuals, if you have any methods in mind that might help me out with the moisture problem that we always encounter here in the tropics, I will be very glad to hear from you on the subject.

The commercial installations here are the ones that give the most trouble, of course most all of them have methyl chloride or "Freon-12."

I have used Activated Alumina, Silica Gel, and Calcium Chloride as drying agents, however, I am a bit skeptical about using Calcium.

I would like very much to get your reaction on the moisture problem.

In closing, I would like to tell you how very much I enjoy reading AIR CONDITIONING & REFRIGERATION NEWS. Of course, I receive my copy a bit late being here in the Canal Zone, but enjoy reading it when it does come down.

Thanking you for a very good paper on Air Conditioning & Refrigerating, hoping to get the Manuals as soon as possible, and with best wishes.

W. F. PARKER,
Refrigerator Inspector for
Commissary Div. of Panama R.R. Co.

Editor's Note: For an answer on the moisture problem, see page 14.

Natural Gas as Fuel For Power Plant

316 Walnut St.
Yankton, S. D.

Editor:

Some time ago you had an article in AIR CONDITIONING & REFRIGERATION NEWS about the results some place in Texas of an attachment used on the Ford V-8 so that it used natural gas as fuel. This was in connection with a small generator for power in an ice plant.

Kindly furnish me with the address of the place where the unit was used or the manufacturer of the change-over equipment for the gas burning or where I can get this information.

J. F. BARTOW

Answer: We are sending you tear sheets from the Jan. 19, 1938 issue of AIR CONDITIONING & REFRIGERATION NEWS covering the subject of "Gas-

Burning Engines Finding Use with Air Conditioning Systems Where Conditions Are Favorable."

Although you referred specifically to the story of an installation in Texas, we believe that this article covers the subject more thoroughly and would be of greater value to you.

Who's Who In Portland, Oregon

Appliance Wholesalers
123 N. E. Third Ave.
Portland, Ore.

Editor:

I have just read an article on page 7 of the Nov. 6 issue of AIR CONDITIONING & REFRIGERATION NEWS headed "F. B. Connelly to open new headquarters." In the body of this article, the REFRIGERATION NEWS states that the F. B. Connelly Co. are distributors for Philco products, ABC washers, L & H ranges, and Evanoh heaters.

For your information, Appliance Wholesalers, Inc. is distributor in Oregon and Washington for these products and by a strange quirk of fate, Connelly's are in the same building that we occupy, however, our address is 429 Boren Ave. North, which is just around the corner from the Republican street address of the F. B. Connelly Co.

I would appreciate if you would have this notice changed as we would not want to have any more confusion caused by this operation, than is the case at the present time as being so close to the Connelly company.

J. G. SEVERTSON,
General Manager

F. B. Connelly Co.
Wholesale Distributors
1015 Republican St., Seattle, Wash.
Nov. 12, 1940

Dear George:

We appreciate the publicity given to our company in the Nov. 6 issue of your paper, and it is fine except that we do not distribute the products listed in your story.

We are distributors of Norge products and Emerson radios rather than Philco products, ABC washers, L & H ranges, and Evanoh heating equipment.

I hope one of these days you may have occasion to visit Seattle when you will give us the pleasure of seeing you again.

K. A. CONNELLY,
Vice President

Our Wish, Too

Meadville, Pa.

Sirs:

Please note the following change of address to take effect immediately: from 759 Alden St. to 909 Fairview Ave.

Thanking you for your prompt attention to this matter, I wish to remain a pleased reader of a great trade journal.

ROBERT G. TRISKET,

Sioux City, Iowa

Sirs:

Please change my address from P. O. Box 85, Cushing, Iowa to the following: 3818 Fifth Ave., Sioux City, Iowa.

So far I have not missed a copy, and furthermore I cannot afford to miss a copy as this magazine is very essential to my business of refrigeration and air conditioning.

Sgt. JAMES S. ISH

Quiz Session With 'Monte Carlo' Twist

Tests Dealers' Knowledge of Ranges

Distributor Mixes Business & Pleasure

By Robert M. Price

PITTSBURGH — The country's favorite game of questions and answers took a gambling twist when a series of "Monte Carlo" meetings were staged by Westinghouse Supply Corp. here in conjunction with a fall electric range campaign. The promotion gave dealers a chance to collect real cash in return for the right answers to questions fired at them about the fine points of the electric range.

The heavy emphasis was on fun, according to "Chuck" Weaver, manager of sales promotion for Westinghouse Supply of Pittsburgh. Each meeting was opened with a short discussion of the electric range activity given by Mr. Weaver. Next, M. C. Schoenly, range supervisor for Westinghouse at Mansfield, explained the fine points of the ranges.

From here on in the meeting was turned into a question and answer game, with dealers on the receiving end.

MONTE CARLO TOUCH

Properties and personnel for the "Monte Carlo" party took the center of the stage, with Jim Nichols, dealer promotion division, West Penn Power Co. as "Diamond Jim Brady"; Chuck Weaver as "Alice in Electric Wonderland"; and Mr. Schoenly as the "Professor."

A gambling wheel was set up with numbers corresponding to tickets held by dealers in the audience. A question board with numbers corresponding to those on the wheel held the questions to be answered by the dealers whose numbers "came up." Presiding over this question and

answer department was "Professor" Schoenly.

At the start of the session each dealer was given \$100 of "gambling money." When the wheel was spun, the dealer whose number showed up had to answer the question. He had to place a "bet"—before he heard the question—that he could come up with the right answer. He could bet with the "house" or with the audience. Plenty of side-bets were placed by the audience as to the ability of the dealer on deck to answer or strike out on the question.

WIN OR LOSE

If the dealer missed the question, he had to pay out. If he got the "Professor's" nod, he collected his winnings. Side-bets, of course, changed hands on each question.

To get the ball rolling, Mr. Weaver produced a supply of cash—in quarters—which was paid off as prizes to the dealers ending the evening with the biggest pile of stage money. The money was deposited in three "pots," the first containing \$3, the second holding \$2, and the third with \$1.

If any dealer was "cleaned" during the course of the betting, he was permitted to buy an additional \$100 for 10 cents in cash. The cash went into pot number 1.

The meetings, combining range education with fun, served to bring the dealers up to date on electric ranges, Mr. Weaver reported, and was a valuable tie-in with the "Leisure for Living" fall promotion. The meetings were held in Washington, Uniontown, Greensburg, and New Kensington.

For Bettor or For Worse



Jim Nichols, West Penn Power Co., rigged out in a "Diamond Jim Brady" get-up, gets ready to spin the question wheel, while Chuck Weaver as "Alice in Electric Wonderland" holds the stakes.



A pile of "money" changed hands at the "Monte Carlo" range meeting as dealers backed their ability to answer questions fired by "Professor" M. C. Schoenly, Westinghouse range supervisor.

Buyers of Used Refrigerators Make Good Prospects For New Ones

PINE LAWN, Mo.—The customer who buys a top-quality trade-in with the thought that he is purchasing a "good as new" refrigerator makes an ideal prospect later on for a brand new model, believes Pine Lawn Hardware Co., Frigidaire dealer here.

The Pine Lawn firm maintains a wide display of used refrigerators in its store, with the idea that two used units must be moved in order to

make room for the sale of one new model.

Whenever a customer buys a good trade-in model, Pine Lawn Hardware Co. makes a special note of the fact. After a long enough time has passed to make the customer a reasonable prospect for another refrigerator, this fact is used as the basis for selling him a brand new model.

Contacting the prospect, the sales-

man points out that formerly he had purchased a used, but good, refrigerator, and explains that it would be almost impossible to find another as good. Although proud of his former bargain, the used refrigerator owner is seldom anxious to buy another used model, Pine Lawn has discovered—and consequently, almost every second-sale to trade-in purchasers is a new refrigerator.

Old Style Trays have seen their Last Days...



IT'S INLAND ICE TRAYS FOR Maximum Convenience...Minimum Cost



There's no doubt about it. These Inland ice trays relegate old style ice trays to obscurity. Today when you say ice cubes, in a flash you think of ice trays by Inland... for a few cubes or a brimming bowlful—instantly, full-sized and unshattered.

It's easy to demonstrate and sell the advantages of these fast-freezing, quick-releasing Magic Finish Ice Trays by Inland. For superswift, maximum convenience, it's the Shucker Tray, of course. And for the

quick-release feature at minimum cost, it's the Tilt Out Tray, beyond question. In other words, for original factory equipment by leading makers or for replacement sales by dealers, ice trays by Inland are first choice for every price and every purpose. For details, prices and discounts, write to

INLAND MANUFACTURING DIVISION
GENERAL MOTORS CORPORATION
DAYTON, OHIO CLARK, NEW JERSEY



For Your Convenience and Profit!

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where you can get
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The Preferred METHYL CHLORIDE
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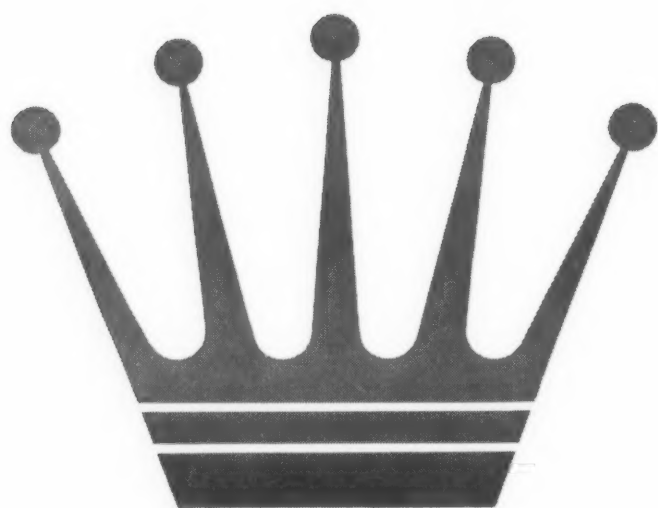


PROOF of the Power of

Leadership

IN 1940 FRIGIDAIRE VI

- ✓ **More than 600,000 Households**
- ✓ **More than 35% of the total id**
- ✓ **More than 30% as many Electric**
as All Other c



1940 was a great year for the entire refrigeration industry. Other
Many companies and dealers rose with the tide of events. Turne
to increased sales. But it remained for Frigidaire selling men. march
to accomplish the outstanding job of this or any other year. Th

Month after month, Frigidaire dealers and salesmen sold. contin
an ever-increasing share of the industry's plus business. accor
securing over 35% of the total increase over 1939, while point

WATCH THE FAVORITE

Frigidaire Division, General Motors Sales Corporation, Dayton, Ohio • Frigidaire Electric

erpf

ership

Leadership in Action!

WE WILL SELL...

Sold Refrigerators!

Industry sales increase over 1939*

Electric Refrigerators

combined!*

*Based on United States sales figures released by National Electric Manufacturers' Association for first 10 months and our estimates for remainder of the year.

Industry. Other dealers divided the remainder. Month after month, they
events turned in great, new sales records. Month after month, they
g men marched to the greatest sales volume in refrigeration history.
r year. The success of the Frigidaire selling organization con-
n sold tinues year after year because it is based on a policy of
ness—accomplishment — Leadership in Action — that inevitably
while points the way to leadership in sales.

THAT'S WHY—IN 1941

Frigidaire dealers and salesmen will again accomplish out-
standing selling achievements. Brilliant, new 1941 Frigidaire
products and aggressive selling plans will put them in an
even stronger competitive position. Nothing has been
overlooked—nothing will be left undone to increase the
predominant leadership of Frigidaire Dealers.

WATCH Frigidaire

• Frigidaire Electric Appliances—Refrigerators, Ranges and Water Heaters

How To Get Proper Air Circulation Where Ultraviolet Lamps Are Used

Experiments Show Ducts Help In Installations Using Blower Units; Humidity Is Raised

NEW YORK CITY—Food preservation conditions in walk-in refrigerators can be materially improved by the correct use of air circulating fans, but considerable care must be taken to see that the fans do their work properly. A. R. Dennington of Westinghouse Electric & Mfg. Co. told the A.S.R.E. at its convention here last week. Mr. Dennington spoke on "High Relative Humidity in Walk-In Refrigerators."

The question of how to obtain high relative humidity in walk-in refrigerators arose in connection with studies in the preservation of meat by means of ultraviolet radiations, Mr. Dennington explained.

"At once it became apparent that several factors, such as temperature, relative humidity, and air circulation are of nearly equal importance in the preservation of meat or other food products without appreciable loss due to discoloration, dehydration, slime, or mold," he said.

Low temperatures and accompanying low humidity effectively controlled slime and mold, but produced surface drying and darkening resulting in wasteful trimming, as well as loss of the savory juices and delicate flavor.

Typical refrigerators in retail meat stores are reportedly held at 34° to 36° F. but actual investigations show that temperatures vary from 32° to 44° F. at different periods of the day, Mr. Dennington reported. A differential of 4°, indeed, may be considered exceptionally satisfactory.

It was also found that raising the temperature by increasing the back pressure has a beneficial effect on relative humidity, with a longer "off" period for melting of frost from coils, while refrigerant and coil temperatures are not so low. Adjusting for a small temperature differential results in maintaining nearly constant relative humidity.

When the temperature and hu-

midity are increased it becomes more important to supply ultraviolet radiation in the bactericidal region, because of the increased tendency for the formation of mold and slime. Moreover, mold and slime develop more rapidly under variable conditions than under constant temperature, while variations in relative humidity draw moisture from meat almost like a pump, Mr. Dennington explained.

When the compressor is running, moisture is picked up from the meat surfaces by the air and deposited on the cooling coils as frost or ice, later to be sent down the drain during the "off" period, or, in more severe cases, during manual defrosting.

Reducing the temperature differential to about 2° F. provides better conditions for preserving the meat when the coil temperature during compressor operation does not go much below 25° F., and the box temperature can be held around 40° F., said the speaker.

"A study of local installations indicates that many refrigerating systems, especially those in service for several years, cannot meet the conditions essential for preservation of meat with minimum loss," he declared.

WORSE IF FANS USED WRONG

"Many refrigerators have been equipped with electric fans for stirring up the air, but there is no uniformity in fan arrangement, and the results are often worse than if there had been no interference with the natural thermal circulation.

"Dependable, constant air circulation in a refrigerator is essential to the maintenance of uniform temperatures in various parts of the box, and when ultraviolet is used to circulate ozone or activated air to the shaded portions of the product stored.

"Proper mechanical means for circulating air mark an improvement over circulation by convection, but placing fans in any convenient position may result in high velocity air currents over meat, which cause drying and darkening.

"Two types of blower cooling units have been encountered in making installations of Sterilamps, and have required some modifications in order to obtain the conditions which have been found essential for best preservation of meat.

"The common type of blower installed at one end or in one corner of a walk-in box, gave, in most cases, a nearly horizontal blast of air with a velocity of as much as 150 feet per minute. Some of these units have no provision for modifying the fan speed, and must be set at the maximum.

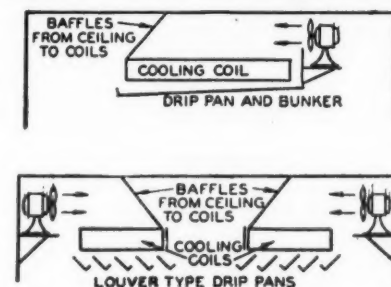
"A single deflector to direct the air toward the ceiling was usually found to be inadequate, and excessive air velocities were thus frequently encountered. Ultraviolet units placed on the ceiling of a refrigerator cooled by a unit of the type described were severely handicapped by the rapid movement of cold air over the slender glass tubes, resulting in a much reduced output.

USE OF DUCTS

"One successful, but relatively expensive remedy, was to construct a duct leading from the blower unit nearly to the opposite wall or corner, with openings in sides and bottom to distribute the air more uniformly.

"Rapid air movement over the meat was prevented and the Steri-

Fig. 1—Fan Arrangements



lamp fixtures could be located away from any direct air current. The air movement over the cooling coils was also reduced but was found to be sufficient for effective cooling of the refrigerator with coil temperatures permitting operation without frosting.

"Another type of cooling unit consists essentially of cooling coils with a fan mounted above and blowing vertically downward onto a horizontal pan to give wide distribution of cold air in a zone somewhat above the horizontal.

"When the lamps were mounted on the ceiling around such a unit, they were found to be in an air blast which caused a material reduction in ultraviolet output.

"This type of unit can usually be adjusted to give high relative humidity as the downward air blast from the fan may be deflected from the surface of water accumulated in the drip pan under the cooling coils.

One Gave, the Other Received



Dr. William R. Hainsworth of Servel, new vice president of the A.S.R.E. and Otto Klopsch, vice president of Wolverine Tube Co., watch Henry B. Pownall inspect the A.S.R.E. Outstanding Publication Award medal which he received at New York convention. Wolverine donated the award.

"After a number of trials, in which baffles were arranged to deflect the air slightly downward and which resulted in too high velocity over the stored products, a solution was found in an arrangement of baffles which deflected the air rather sharply upward, at an angle of approximately 45° around the edge of the drip pan.

"The air blast striking the ceiling was deflected and diffused so that small shields for the lamps were found to be sufficient to provide gentle eddy currents and prevent excessive cooling.

"It was also discovered that the air distribution in the refrigerator had been improved. Where, before the change, meat or other products hung on the upper hooks or racks had been subject to comparatively rapid air currents, there was now no rapidly moving air in the upper areas but merely a gentle and nearly uniform circulation in all parts of the storage space."

OVERHEAD COOLING COILS

The type of refrigerator most commonly found in retail markets is equipped with overhead cooling coils and has either sloping wooden bunks or flash pans under the coils, convection being depended upon for air circulation. Fans may be found operating in various parts of the refrigerator, but with no relation to the direction of the normal convection currents.

Slow flow of air through the cooling coils increases the tendency for the coils to frost and, in many instances, this is further enhanced by a comparatively long operating period. These conditions make it impossible to build up the relative humidity to approximately 90%, such as is desired at a refrigerator temperature of 40° F., Mr. Dennington explained.

"In our investigations," he said, "various spray types of humidifiers

were tried out in an effort to increase the relative humidity. While humidity readings could be increased in this manner, it was found that the droplets of moisture were not completely vaporized at the temperature of the refrigerator, and were deposited on the surface of the meat.

"Mold spores and slime bacteria were thus carried into the crevices of the meat and resulted in spoilage that required very heavy trimming. There was also the hazard of a water line in the refrigerator which might be ruptured by freezing. Humidity control devices were tried but at the high humidities desired, the results obtained were not sufficiently better to justify the investment.

FANS AND BAFFLES

"After many trials, including the complete replacement of the coils in our 6 ft. x 8 ft. refrigerator, an arrangement of fans and baffles was found which gave satisfactory results, as determined not only by temperature and humidity charts, but also by the bright color and low weight shrinkage of the meat. This combination of fans and baffles is indicated in Fig. 1, which shows the position of the various elements for a double coil and conventional bunker.

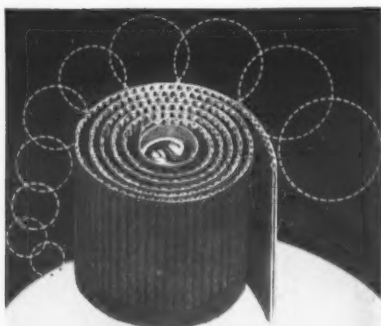
"The effect of placing fans in the warm air ducts and providing baffles from the ceiling to the upper edge of the cooling coil is to obtain the advantages of a forced airflow over the coils, and thus to convert the system into an effective unit cooler.

"Frosting is eliminated or materially reduced, and moisture on the cooling surface is evaporated and carried back into the air, thus raising the relative humidity. Meat in storage is not subject to rapidly moving air currents, but there is sufficient circulation to keep all parts of the refrigerator at nearly constant temperature."

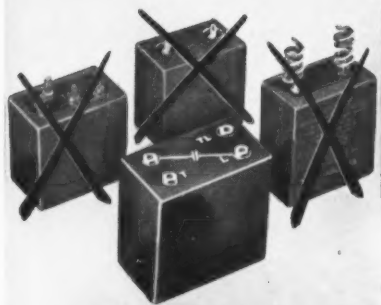
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Here's the only practical solution to the problem of complicated inventories on Motor Start Capacitor replacements. It reduces your inventory investment from one-half to two-thirds. Round types MSU are all housed in the smallest diameter and shortest height metal container possible. Each is equipped with a specially developed "size adjuster" for all diameters up to 3" and any height up to 4 3/4". The adjuster is fully calibrated. You just trim it to get the exact size you need. Rectangular types MSG and MSF are each packed with complete hardware for every installation need. Mallory's leadership in the field of Capacitors is a guarantee of quality that can't be surpassed. Start saving time and money now. Specify Mallory Universal AC Capacitors.

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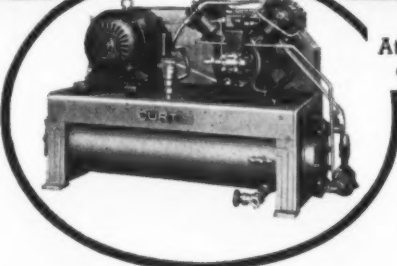
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Why Curtis is the Extra Value Line



At left—The Curtis 15 H.P. Shell and Tube Condensing Unit.



CURTIS REFRIGERATION
AIR CONDITIONING AND COMMERCIAL
"Builders of Condensing Units Since 1922"

CURTIS REFRIGERATING MACHINE CO., 1912 Kienlen Ave., St. Louis, Mo.
Division of Curtis Manufacturing Company

The CURTIS Foundry

To insure quality and complete control over every step in production, CURTIS maintains its own foundries. Since all CURTIS castings are for compressor service, they must be extremely hard for long life and close grained to prevent seepage of gas, and to insure this a special semi-steel alloy is used. This close control is not feasible where castings are furnished by a jobbing foundry.

The foundry is but another example of Curtis insistence upon quality in manufacture, of assuring extra value. From drafting board to finished product, every step of production is under Curtis control, followed through step by step in the vast Curtis 20-acre plant. It is this care and precision that result in the exceptionally long life, high efficiency and care-free performance of every Curtis Condensing Unit.

UNCOVERING THE CONVENTION

NOTES ON THE A.S.R.E. ANNUAL MEETING

BY PHIL B. REDEKER & ROBERT M. PRICE

Ottenheimer In Action

R. E. Ottenheimer, who has been in the refrigeration industry since about 1912 and who was a well-known figure in the early days of display case manufacture, is coming back into the manufacturing field again.

For some years Mr. Ottenheimer has been a refrigeration equipment consultant, particularly with reference to equipment for quick-frozen foods, but he is now again producing equipment on which he expects to make some advertising announcements around the first of the year.

Treasury Note

Jack Stone of Johns-Manville, popular member of the New York section of the A.S.R.E., no sooner found himself elected treasurer of the national society than he was beset upon by Otto Klopsch, dynamic vice president of Wolverine Tube Co. and an officer of the Detroit section.

"Ah, there, Mr. Stone," said the buttonholing Mr. Klopsch, "now that you are treasurer, you can write that little check which is due our section for program expense."

"Well-ah, I'll consider it," began the diplomatic Mr. Stone.

"Consider it, hell," thundered Otto. "Write the check."

Which is maybe why the Detroit section is one of the best, if not the best, section in the whole society.

Marion Time Table

Tom Pendergast, Universal Cooler vice president, likes the company's new home in Marion, Ohio fine, and says things are really humming along in the new plant there.

"The town's Chamber of Commerce is a lively group," Tom was explaining, "and likes to boast about things such as the fact that a train goes through Marion every 3½ minutes."

"Ha," broke in one of the suppliers present, "they're too modest. The night I slept in a hotel there I'll swear a train went through every 1½ minutes."

Reds Invite Tigers

Herb Money, Crosley refrigeration engineer, was inviting members of the various sections to be sure to attend the Spring meeting at Cincinnati.

"I'm sure that the Detroit members will have a good time," said Mr. Money with a bow to Louis Morse, Jr., Joe Krall, and other Detroit section members, "at least a better time than they may have had during the first week of October." (Maybe the Detroit section should

organize a softball team to play the Cincinnati section.)

To Freeze the Enemy?

A. H. Eustis, Virginia Smelting Co., who was not present at the Spring meeting, still taking it easy at the time following a siege of pneumonia, was a regular attendant at the sessions last week, and looked very fit.

Refrigerant manufacturers will figure in the arms preparation program in some manner, he thinks, but just exactly how has thus far been kept a mystery by the government. However, there is little if any likelihood that refrigerant production will be disturbed.

How To Hear From Friends

"I've found out how to hear from all your old acquaintances," says Gordon Gildersleeve, new Minneapolis-Honeywell refrigeration controls division eastern manager. "Just get appointed to a new job and have it publicized in AIR CONDITIONING & REFRIGERATION NEWS."

Gordon says he suddenly received a stack of correspondence from old acquaintances, and couldn't figure it out until he picked up the copy of the News that had his story and photograph.

Like Puzzles?

Glenn Muffly, consulting engineer and patent expert, was having his own brand of fun at the convention by polling the industry's best minds on their interpretation of a statement which appeared in a recent refrigeration patent.

The statement was as follows:

A B

"Space A is deriving heat absorption from space B."

Mr. Muffly wants to know which way the heat is flowing.

A slight preponderance of the voting seem to favor the idea that the heat flows from B to A. Voting on this side were Jens Touborg and C. M. Brown of Tecumseh Products; H. Teator, Frigidaire; W. F. Zieber, York; Prof. Stewart, Penn State College; L. A. Clair, U. S. Patent Office; and Ben Seamon, Chicago engineer.

Voting for an "A to B" heat flow were George Hulse, retiring A.S.R.E. president; Otto Klopsch, Wolverine Tube; L. M. Keighley, Frigidaire; and Mr. Muffly's son.

E. T. Williams, who knows a thing or two about patents, says it must travel in both directions.

"It can't be done," was Harry Edwards' pronouncement.

"It goes straight up," declared Louis Morse, Sr., York engineer.

Ralph Baker drew arrows indicating that the heat flow might be back and forth in a snake-like motion.

The News will welcome a further discussion of this little problem. Please submit reasons with your answer.

Neglected Evidence

At the air conditioning conference, one member remarked that as yet no cooling installation had been made in which there was "no movement of air." Cracked John Parsons, New York consulting engineer: "Apparently the member has not inspected one of the air conditioning jobs designed and installed by the W.P.A."

'Houdini' Hench Has It

On hand with his "illusions smuggled out of darkest India" was George Hench of Northern Indiana Brass Co. George had a huge bag of tricks with him, with enough quicker-than-the-eye paraphernalia to put the best efforts of Thurston in the piker class. He gave a swell showing of his skill, but admits to saving the main events for another session. We advise you to get your front seats early.

New York Street Music

Outside the Commodore we witnessed one of those "New York Scenes" which the late Odd McIntyre used to love to write about. Walking along the street, his head in the air, a "sandwich man" gave voice to a song which we recognized as "Halle-



(Left) "But if you use a magnetic valve—" Art Schellenberg, president, Alco Valve Co., seems to be saying to John Bergdoll, York Ice Machinery Corp. vice president. (Right) Friendly competitors exchange notes. George Boone, eastern representative for Tecumseh, and Frank Gleason, Copeland Refrigeration Corp.'s vice president.

lujah, I'm a bum." Making the most of a difficult situation, we'd say.

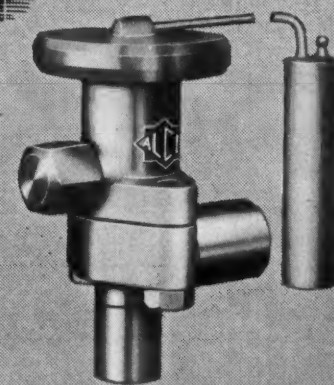
Convention Flashes

Some Convention Flashes . . . Jim Strachan hinting that the Kerotest display at the All-Industry Show in January will be something radically different. . . Roy Stephens of Detroit Lubricator playing stooge to the lively stories told by Al Dietl of Refrigeration Service, Newark. . . A fine turnout from the Ranco organization including E. C. Raney, Ed Graff, and Art Hohmeyer. . . Ed explaining that he passed up the dancing with the A.S.R.E. belles because a piece of shrapnel in his foot, picked up in World War I, still bothers him. . . Tom Coyle of du Pont kidding with the expansion valve men about the "big business"

in thermostatic bulb filling . . . it isn't so little at that. . . Dave Crampton of Wallace & Tiernan receiving compliments for his fine paper on heat exchangers and also on the lovely singing voice of his wife. . . Ken Newcum of Superior Valve & Fittings receiving compliments for his discussion of the heat exchanger paper. . . "The clearest presentation I've heard at the meeting," said A. H. Eustis. . . Tom Carpenter, one of the industry's veterans, who started on a new job with G-E the first of December. . . Art Schellenberg of Alco Valve leading the usual good sized Alco delegation to the conclave, and trying to figure out a satisfactory way to explain a torn pantleg incurred at the banquet. . . George Boone of Tecumseh policing the anteroom during sessions, heckling latecomers.



★ Chart at left illustrates the trend of Alco sales from 1925 to date.



Ever Widening Recognition—
Steadily Increasing Sales

Prove the Superiority
of ALCO Performance

As shown on the above chart, year after year, sales of Alco controls have forged ahead. More and more original equipment manufacturers, contractors and jobbers recognize and appreciate the advantages found only in Alco Valves.

Such tremendous gains in recent years are definite proof of the superiority of Alco valve design and performance — reflected in the ever-widening acceptance of Alco Controls by the air conditioning and refrigeration industries.

From unit coolers to the largest nationally known installations, you'll find Alco Engineered Refrigerant Controls on the job day after day, contributing to the efficiency and improving performance in thousands of systems.

Alco thanks the industry for their widespread recognition of the advantages offered by the exceptional accuracy and dependability of Alco Controls.

ALCO VALVE COMPANY

2620 Big Bend Boulevard

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New York • Chicago • San Francisco • Los Angeles • Seattle



Engineered Refrigerant Controls

FOR HIGHEST EVAPORATOR EFFICIENCY



(Left) W. H. Maxwell of Wolverine Tube; Ed Fitzgerald of G-E; and Herb Money of Crosley, get some words of wisdom from Otto Klopsch. (Right) "Glad to see you here," Ken Newcum of Superior Valve & Fittings tells August Ulbert of Alco Valve. Jack Riordan, American Coils Co., is the onlooker.

CASCADING COLD...TRIGGER CONTROLLED

GUN COOLERS

EACH A STREAMLINED POWER PLANT OF COLD

Write for full details today

Peerless OF AMERICA INC.

Midwest Factory General Offices—515 West 35th Street, Chicago
Branch Offices: New York, Los Angeles, Dallas, Export Div., Detroit

Serviceman Lists Troubles From Moisture In a Methyl System

Correct Use of Drying Agents, Vacuum Treatment, And Proper Oils Suggested as Remedies

Decatur, Ill.
Oct. 21, 1940

Editor:

Being a constant reader of your wonderful paper, I would like to ask several questions.

If a methyl chloride job has moisture in the system, what steps can be taken to eliminate the trouble and all future troubles with the machine, especially the thermo-expansion valves? Can anything be added to a methyl system to eliminate stuck valves, etc? What is the best dryer to use with methyl?

The system I have in mind, I believe, is in the copper-plating process, that is, the oil looks like copper and also the walls of the compressor. It is a commercial job with a 6 x 8 walk-in cooler and a 10-foot meat case.

This system had a lot of SO₂ mixed with the methyl about two years ago. Is the moisture content of methyl great enough to cause copper plating after a few years? Or would it have to have quite a bit of moisture in the system?

This system as it is now is always kicking out valves, about six months is the best they will do under conditions of the system. Can this trouble be eliminated and what necessary steps should be taken? If this system was overhauled would the evaporative coils have to be replaced or can they be blown out enough to eliminate any trouble?

What is the best dryer for SO₂? I would appreciate very much for any information and data you can give me for this kind of trouble.

Do you think if the pump and receiver tank was cleaned out that it would give any trouble?

Personally, the evaporative coils are the biggest problem for me. I cleaned this job out once, and after six months the oil has a copper look and the valves won't hold up.

I pumped a vacuum on the whole system for about three hours, in the meantime I heated the evaporative

coils with a torch, being careful of leaks, left the high side open on pump and let gas out. I washed the compressor in carbon-tet. several times and also the receiver tank which had a cup full of mud in it. I washed it out thoroughly, I replaced the lines, new valves, new gas and oil.

Pumped a vacuum on system for 30 minutes, then recharged with methyl and purged system again. Worked okay for six months, since that time I have been having valve trouble. Would very much appreciate if you could answer these questions under separate cover.

Answer: Detailed information on the questions you raise may be found in articles by V. E. Hall in the Nov. 16, 1938, K. M. Newcum in the April 17, 1940, and E. W. McGovern in the Mar. 22, 1939 issues of AIR CONDITIONING & REFRIGERATION NEWS.

The information in the article by E. W. McGovern which specifically relates to your question, might be summarized as follows:

USE OF CHEMICAL DRYER

If moisture is contained in small quantities in a system charged with methyl chloride, it may be removed by a chemical dryer such as Activated Alumina, Drierite, or Silica Gel in the liquid line. If moisture is present in considerable quantities, the system must be discharged, dried, recharged, and then, for added insurance, treated with a chemical dryer.

Anti-freezes of the alcohol type do not remove water from refrigerating systems or change it chemically to harmless compounds, but allow the water to remain in the system where it may exert its other bad effects such as corrosion.

Therefore, if an anti-freeze is used to open up a frozen system or to keep it open, it should always be

followed by a chemical dryer to remove water. The anti-freeze itself should be non-corrosive and otherwise harmless. In this connection, a mixture of dry methyl chloride and methyl alcohol is somewhat corrosive to steel.

LIQUID 'DRYING AGENT'

A liquid "drying agent" which aside from the anti-freeze qualities, chemically reacts with water, has been reported as being beneficial when used in small amounts in systems containing only small amounts of moisture; the use of large amounts of this liquid "drying agent" for large amounts of moisture would appear undesirable.

Copper "plating" follows from solution of copper in a lubricating oil whence the copper is precipitated, generally, by the action of moisture or acids produced by moisture.

Refrigerants in factory filled containers are low enough in moisture content. However, the degree of contamination experienced when the refrigerant is discharged into a machine may be sufficient to result in copper plating and other moisture troubles.

It is believed that the moisture content of a methyl chloride system should be below 0.015% by weight. In eliminating copper plating, it is also helpful to use a high grade of lubricating oil as recommended by the machine manufacturer. Evaporator coils from a moist system can be used again if properly dried.

SULPHUR DIOXIDE SYSTEM

It is particularly important to keep moisture out of sulphur dioxide systems since, generally speaking, it is impractical to dry a sulphur dioxide system once moisture has entered it except by removing the oil and the refrigerant charge, and then cleaning and drying the machine.

However, some degree of relief may be obtained by the use of one of the above mentioned drying agents in the vapor suction line; liquid phase drying is even less effective.

When a machine is taken down for cleaning and drying, attention should be given to all parts of the system, although it is true that the largest amounts of moisture may be found in the coldest parts of the system such as the evaporator.

VACUUM METHOD

In drying a machine by vacuum treatment, a point that is very commonly overlooked is that the vacuum must be quite high unless the entire machine is heated to a sufficiently high temperature and even then a fairly high vacuum should be used.

For example, if only a moderately high vacuum is applied, say 28 inches, water in the system will not boil unless it is raised to a temperature of at least 104° F. and if part of the machine is 104° F. or above but other parts are colder, the moisture may condense in these colder parts.

At 59° F., a vacuum of about 29.5 inches is required to produce boiling of water that may be present. Even with high temperatures and a high vacuum the amount of moisture left behind as vapor after a single vacuum treatment may be appreciable and, therefore, in case of doubt, it is well to fill the machine with dry air after one vacuum treatment and re-evacuate.

It Could Be Engineering—or Baseball



At the A.S.R.E.'s annual convention, Jim Strachan of Kerotest, W. W. "Dusty" Rhodes of Kinetic Chemicals, and Wid Siegfried of Kerotest listen as Herb Money, Crosley chief refrigeration engineer, discusses the new developments in household refrigerator design for 1941—or is he bragging about the Cincinnati Reds?

Question of the Week

Answered By

F. O. JORDAN, Registered Consulting Engineer, State of Michigan

Coca Cola Freezes As Bottle Is Opened

Editor:

Why is it that Coca Cola sometimes freezes the moment the bottle is opened, even though it was still in the liquid state before opening the bottle?

W. D. J.

Answer: Here is my version. Let's see if you can find any flaw in it.

To start with, the Coca Cola certainly must be very close to its freezing point before we open it. While it is still closed up in the bottle it may even be colder than its freezing point when it is exposed only to atmospheric pressure.

To understand this, you must remember that the freezing point of liquids is lowered by increase in pressure.

As long as the bottle is closed tightly, the Coca Cola in it is subjected to a pressure considerably higher than atmospheric because it is impregnated with carbon dioxide at high pressure. The result is that the carbonated beverage under pressure in the closed bottle may be even colder than its freezing pressure when it is subjected only to normal atmospheric pressure. This is true because its freezing temperature is lowered by the pressure.

Therefore, it may be a liquid as long as the bottle is unopened even though its temperature is below freezing at atmospheric. Obviously, some of the liquid must freeze as soon as the bottle is opened. In fact, enough of it will freeze to give off enough heat to raise the temperature of the remainder of the Coca Cola above its freezing point at atmospheric pressure.

In addition to this, there is another factor that gets in its work. This is the cooling effect of the boiling or vaporizing of liquid into the form of gas.

You will remember this cooling effect is the result of the fact that the application of heat is required to evaporate, or change, a liquid into a gas. Of course, this absorption of heat required for vaporization of the liquid cools any adjacent materials because the heat required to change the liquid into gas is taken from them.

The sudden reduction of pressure on the Coca Cola when the bottle is opened results in the instant evaporation of some of the carbon dioxide from the liquid state in which it is mingled with Coca Cola.

This sudden evaporation at the surface of the liquid results in a sudden lowering of temperature of the surface. Even if the temperature were slightly above freezing to start with, this evaporative cooling effect might be enough to lower the temperature sufficiently to cause freezing.

In effect, we actually would have a miniature CO₂ refrigerating plant right there in the neck of our bottle of carbonated thirst quencher.

When we combine these two effects and so have a refrigeration plant still further cooling Coca Cola that is already below its freezing point, there is little wonder we find an impromptu Coca Cola Ice.

Chamberlain In Coast Cutler-Hammer Office

LOS ANGELES—B. H. Chamberlain, formerly of the Cutler-Hammer Detroit office, is now with the company's Los Angeles sales staff. W. G. Tapping is manager of the Los Angeles district territory.

Cutler-Hammer has just completed its new west coast factory.

★★★★★★★★



Mills Condensing Units
By Mills Novelty Company
4100 Fullerton Ave., Chicago, Ill.

★★★★★★★★

FOR YOUR OWN PROTECTION

Standardize
ON DAVISON'S
SILICA GEL

THE FOOL-PROOF DRYING AGENT FOR REFRIGERANTS



SILICA GEL

is the drying agent that you can use with complete confidence. You will be able to forget moisture troubles and freeze-ups because Silica Gel takes up 1½ to 2 times as much moisture as many other materials—instantly and permanently. It does not cake or powder. It removes acids and corrosive compounds. It gives you assurance that your customers will always be satisfied.

Join the thousands of service engineers and manufacturers who have put an end to moisture troubles by standardizing on Silica Gel.

You can obtain your favorite dryer charged with Silica Gel or Silica Gel for refill from your jobber.

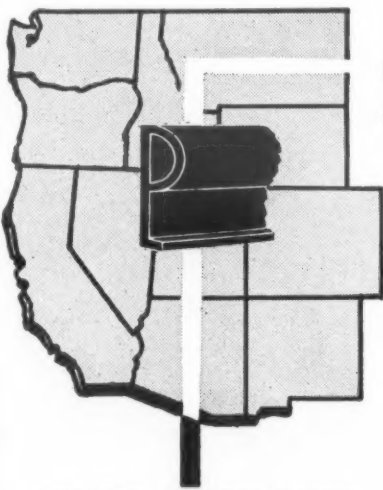
Over one million refrigeration units equipped with permanently installed Silica Gel charged dehydrators are in daily use

For complete information see your jobber or write to

THE DAVISON CHEMICAL CORPORATION

Silica Gel Department

BALTIMORE, MARYLAND



THE MOST COMPLETE LINE OF REFRIGERATION GASKETS AND SPONGE RUBBER INSULATION

IN THE West and all over the country

JARROW GASKETS ARE PREFERRED

In the 11 Western States, refrigeration experts have shown their preference for Jarrow Gaskets so unmistakably that 81% of the recognized refrigeration supply jobbers have found it profitable to stock Jarrow exclusively.

Why is Jarrow the leader? Because the complete Jarrow line will service about 90% of all refrigerating units. Because Jarrow gaskets are used as original equipment by many manufacturers. Because service engineers have found that they can get the best by asking for Jarrow products.

General Office:

Factories: Chicago and Grand Rapids

JARROW PRODUCTS, 420 N. LaSalle St., CHICAGO

International Harvester Co. Adopts Its 'Show' Em & Sell 'Em' Tactics To Coolers



SPOKANE, Wash.—A new wrinkle in trailer-selling of commercial refrigeration equipment has been developed by the Spokane branch of International Harvester Co., to help salesmen in demonstrating the advantages of walk-in coolers to prospects in rural areas.

An actual walk-in unit has been made into a special trailer, and furnished to each of the branch's salesmen. Unit used is the No. 1 walk-in box, equipped with a Peerless model 50 Gun Cooler. A compressor is carried on the rear of the trailer, and can be plugged in so that the complete system can be put into operation for demonstration purposes.

The trailer is pulled behind each salesman's regular panel truck when he goes out to work his rural territory. Color scheme of both truck and trailer is blue and white.

Best time for group demonstrations, it has been found, is Saturday afternoon and night. Truck and trailer are pulled up to the curb on the town square or main street, and the cooler put into operation by plugging-in the compressor. Pros-

pects step right off the curb and into the cooler, where the salesman explains its various features, and arranges for follow-ups on prospects who seem especially interested.

Wherever possible, the trailer demonstration is conducted in cooperation with the local International Harvester dealer. In addition to town showings, the mobile walk-in units also make the rounds of REA meetings, dairy meetings, and other affairs at which farmers gather.

Between group showings, the trailer is used for individual farm follow-ups. After the promotional phase is over, the branch plans to make the units available to dealers for farm-to-farm canvassing.

In addition to proving valuable in group showings, the trailer also has a potential market in itself as a mobile cooler for CCC camp crews, reports Howard Murray, commercial refrigeration manager of the Spokane branch. Idea for the special trailer and promotion is credited to R. R. McDonald, assistant manager of the branch.

Baylor U.'s New Medical Lab Has Dual Cooling Use

DALLAS, Tex.—The new \$50,000 X-ray clinic and laboratory at Baylor University's medical school here, said to be the finest set-up of its kind in the South, will use refrigeration equipment both for properly conditioning the air in the X-ray "dark-room" and for maintaining temperature control over the water used in the developing processes.

Installation of this equipment was made by Aire-Rite Corp., which is headed by George W. Knight, Jr. A 3/4-hp. Kelvinator compressor operating in conjunction with a model C70-ODV Kelvinator conditioning unit handles the air conditioning, while a 1 1/2-hp. Kelvinator compressor hooked up with a Temprite cooler serves to regulate the water temperature. Both units are mounted outside the laboratory proper.

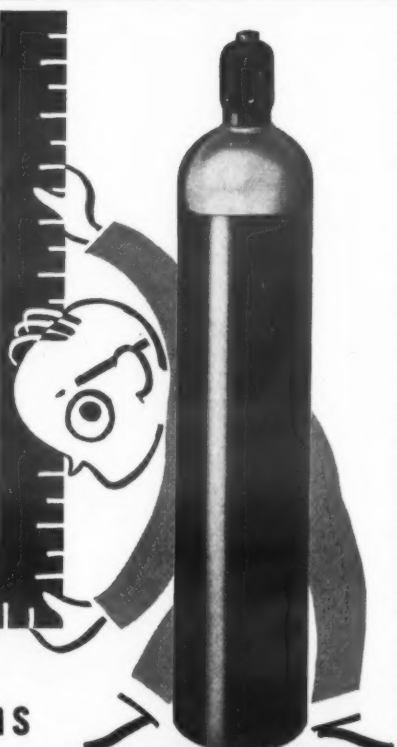
Plans are now under consideration by medical authorities at the hospital, Mr. Knight says, for installation of an elaborate air exhaust and filtering system in the rooms where patients suffering from highly contagious and malignant diseases will be treated.

Rooms in which X-ray equipment is now in use have been insulated with lead lining to protect the control operators against the effects of the rays, which previously penetrated through the walls of the X-ray chambers. Under the new set-up, equipment operators will be entirely separated from the patients, who will be viewed through glass windows built into the massive leaded doors. Even these windows will contain lead, making them impenetrable to the rays.

New Soda Draft Arm 'Peps Up' Soft Drinks By More Carbonation

CHICAGO—A new type soda water draft arm which, it is claimed, allows the fountain operator to dispense drinks carbonated 30% higher than has formerly been possible, equaling bottled beverages in this respect, has been developed by Bastian-Blessing Co. as standard equipment on all 1941 bottals and complete soda fountains.

Known as the "Super-Soda" draft arm, the device is designed to help fountain operators in rebuilding the volume of 5-cent fountain drinks over the bottled variety. The new draft arm, it is claimed, makes it possible to serve a 10 to 12-ounce drink, highly carbonated, for 5 cents, and show a gross profit of 80%. The device will operate on any fountain which chills the carbonated water to below 40° F.



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ICE-X
METHYL CHLORIDE

A Square Deal in Friendly Dimensions

Ansul Jobber service has two prime characteristics: It is square like the corners of this advertisement; and like this advertisement it extends itself in two directions—one, toward efficient, expert servicing of your needs; two, toward genuinely friendly and helpful attention to your business. We are proud of our Ansul Jobbers. You will be pleased to discover why.

Agents for Kinetic's 'Freon-12'
ANSUL CHEMICAL COMPANY
MARINETTE WISCONSIN

For Restaurants, Scholnick Offers Even Toothpicks

Refrigeration Dealer's Proposal Aimed To Cover Everything

By Robert M. Price

PITTSBURGH — Beginning the sales approach when a restaurant or tavern owner is "starting to think about equipment," salesmen for Scholnick, Inc. can offer a complete proposal that includes everything from complete refrigeration equipment down to napkins and toothpicks.

Set up to do a complete job of this kind, the firm has facilities for designing and engineering, plus metal and woodworking shops housed in the company's 10-story building. Several floors of this building are given over to displays of equipment and supplies for restaurants, bars, and cafeterias.

So complete is the service and equipment offered that one salesman cited a case where after selling a hotel tavern job—from bar to toothpicks—he offered to supply the tavern manager with "good-looking hostesses"—and did it.

DRAWING FIRST

A majority of the jobs are sold as "custom-built," being tailored to the tavern or restaurant owner's specifications. After learning the customer's needs and desires, the salesman draws up a rough plan. From this plan a blueprint and finished drawing is made. The proposal sheet, with specified equipment and costs, is the next selling step.

This proposal sheet carries necessary data on all equipment to be supplied, which in addition to refrigerating and beer dispensing equipment, includes stools, booths, silverware, dishes, and all other accessories needed to "open the doors."

If desired, the firm will draw up plans for store fronts. Contract for this work is "farmed out" to a building contractor. Thus, the customer can completely equip his restaurant or tavern through the Scholnick company, making the selling job more productive and the buying job easier.

DISPLAYS KEPT

Complete bars, with reach-in boxes and pre-coolers, are built to specification. A number of these bars are kept on display at the firm's showrooms. One completely equipped bar, designed and built by the company, is used for demonstration on the first floor showroom.

The company has only recently added the refrigeration department to round out the complete restaurant and tavern equipment selling story. The "Super-Cold" line of cooling and dispensing equipment is featured. A service department, under direction of H. Treganowan, takes care of service on all refrigeration equipment installed.

The firm's set-up enables the handling of large installation work. Two such jobs were complete cafeterias installed in high schools at Cumberland, Md. and Frostberg, Md.

These contracts called for designing and equipping the kitchens and service centers of these cafeterias, even to laying out the "traffic" routes from kitchen to service counters. Refrigeration equipment for storage and serving food was also installed.

Another cafeteria job was installed for the Dravo Co. of Pittsburgh, Carrier distributor in this district. This installation, which was designed and engineered by Vincent P. Getty of the Scholnick Co., was unusual in that the building housing this installation was built around the kitchen and cafeteria equipment, rather than having a building built and allotting a space for equipment. The refrigeration equipment, in this case, was installed by Dravo Co.

To aid in this "one stop" selling technique, salesmen carry a catalog illustrating and describing the company's complete line, and sales are aided by photographs of finished installations. Salesmen are trained to sell the whole line, although at the present time two salesmen are concentrating on beer equipment.

Fruit and Vegetable Store In One Big Walk-In Cooler

WACO, Tex.—A large walk-in refrigerator which is an integral part of the store itself is used for display purposes and as a retail sales area for fruits and vegetables sold by the Clark Grocery & Meat Market here. Kept at a temperature of from 55° to 58° F., with a relative humidity of 90%, the room has been responsible for a steady gain in business volume and a sharp reduction in losses from spoilage.

Enclosed in double-plate glass on three sides, the vegetable and fruit cooler occupies an area measuring 20 by 31 feet. It has a ceiling height of 8 1/2 feet. Insulation is 4 inches of Eagle-Picher wool, which extends to walls, floor, and ceiling.

Refrigeration is supplied by a Peerless unit powered by a Carrier 3-hp. compressor. The room is illuminated by fluorescent tubes.

Along with a display of approximately \$1,000 worth of fruits and vegetables the room contains a large reach-in refrigerator used for dairy products. The presence of this refrigerator increases store traffic in the refrigerated display room.

The store is open 24 hours a day, and Jim Clark, one of the owners, reports that the elimination of spoilage saves a great deal of time that was formerly spent in sorting produce on display.

The installation was under the supervision of A. F. Avery, manager of the Air-Con Engineering Co. Cliff Terrell is installation superintendent for the company.

3 Separate Areas Are Conditioned In Store

NEW YORK CITY—Problems presented by high light intensity, necessitating high air volume and the maintenance of proper temperatures and humidities in three distinct areas, called for development of an air conditioning system of unusual design in the Shelby Shoe Store here.

The solution was found in the construction of a blow-through system, with booster recirculating fans used to supply conditioned air to the enclosed men's shop and executive offices. These fans have automatic mixing dampers thermostatically controlled, thus preventing over-cooling of the small spaces in the store. Air is removed by an independent exhaust system.

The system includes a direct-expansion cooling coil and heating coil. There is also a pre-cooling coil in the fresh air intake duct. This was done so that when the temperature requirements are satisfied in the main sales area, the relative humidity may still be maintained at a low level without over cooling or having it build up.

Refrigeration is provided by a Trane 30-hp. duplex compressor, and each compressor unit operates its own coil, giving the flexibility of zone control. Fans, cooling, and heating coils also were supplied by the Trane Co.

The pneumatic control system used on the Shelby store is equipped with an outdoor-indoor compensating control. Schwerin Air Conditioning Corp. made the installation.

"I Married a Smart Husband He's a G-E Dealer!"

Mrs. D. Kerwin Twomey, wife of successful G-E Dealer of Biddeford, Maine, tells you how she feels about being a member of the great G-E family.



"WHY AM I TALKING about my husband's business? Simply because I'm mighty interested in it. I like it. And I know a lot about it because we've always made it a habit to talk things over together. We're really partners."

"He's proud of his success . . . and I am too!"

"As he says, every time he sells a G-E unit he makes another friend."

"I don't believe I know a soul who hasn't a refrigerator, a fan or something made by G-E. That's why he says it's easy to get to prospects and why they're sold on the name and reputation of General Electric."

"And he enjoys working with his distributor and the company representative. They give him a lot of special training and they are always handy when he needs help. They supply him with all kinds of literature and promotion material. And of course he benefits by the grand advertising G-E does."

"G-E is the finest money can buy—"

"When my husband sells a G-E walk-in cabinet or any of the other refrigeration or cooling equipment or a G-E furnace he knows he is giving his customers the finest they can buy."

"I know G-E engineering and research couldn't produce anything

but the finest. And that's exactly what my husband tells customers—that convinces them."

"He doesn't get called out of bed at all hours because something's gone wrong. And besides, he's been all through the special technical training provided by G-E. That means installations are right to begin with."

"We live very comfortably"

"Of course my husband is in business to make money—and he does. Naturally he handles the complete lines—G-E Commercial Refrigeration, Cooling and Heating."

"He says they are the most complete lines in the business. No matter what prospects want he usually can supply them. Not only that, he has cut out what they call seasonal slumps."

"He carries what he calls a skeleton line. This keeps inventory costs down because he can get whatever he needs in a hurry, from his distributor."

"This gives you some idea what it means to be a G-E Dealer. And there are lots of other reasons too!"

GENERAL ELECTRIC

You can be a G-E Dealer if you can fill certain requirements. For year 'round profits, fill in and mail the coupon today.



Commercial Refrigeration



Cooling



Heating

GENERAL ELECTRIC CO.
Div. 199-670, Bloomfield, N. J.
I want all details on the G-E Dealership for my territory.

Name _____
Street _____
City _____ State _____

Equipment For a Rebuilding Plant

2. Motor Tester

Editor's Note: This description of a motor tester is the second of a series of articles to be published in AIR CONDITIONING & REFRIGERATION NEWS on the special equipment used by Associated Refrigerator Plant, Inc. in its re-building of household refrigerator units. These articles will describe equipment that any service man can make in his own shop.

By Edward M. Siegel, Associated Refrigerator Plant, Inc., Philadelphia

The photograph and drawing show a gadget which we have rigged up on our shop bench for the quick checking of motors which have been brought in from the field or which have been taken off of boxes.

It is designed merely to automatically apply and remove a predetermined load from the motor in question.

A base is provided, which may be

seen in the photograph, on which any motor may be mounted. It has adapter rails which may be removed so that any motor base may be fastened down securely and firmly.

This fastening process is quite important when the motor is to be checked for quietness of operation. If it is not fastened securely, the resultant rattles will make an accurate noise check impossible.

In the upper left of the photograph will be seen a Penn high pressure cutout. This is piped into the compressor which may be seen in the right background, and which is nothing but an ordinary Kelvinator 1/4-hp. pump.

This pump is belted to the motor to be tested, and the head line is connected to a gauge, to the cutout switch, and to a bleeder valve.

Cutout is set at some pre-deter-

mined cutin and cutout point. In our case, we usually leave it set at 165 lbs. cutin and 235 lbs. cutout.

The valve bleeder is so adjusted as to allow air to bleed out of the system very slowly. In this way on the first start the pump motor operates under no load, and runs till it has built up a 235-lb. pressure. The cutout then shuts the motor off, and the air bleeds through the valve slowly till the pressure drops to 165 lbs., when the cutout operates, and starts the motor up under load.

A motor is allowed to cycle like this for 10 or 15 minutes, and it is then carefully checked for noise, vibration, and heating before being sent out on a job.

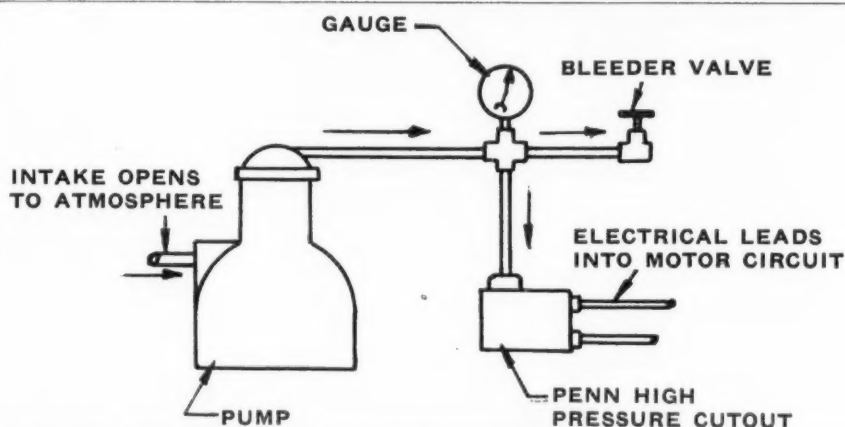
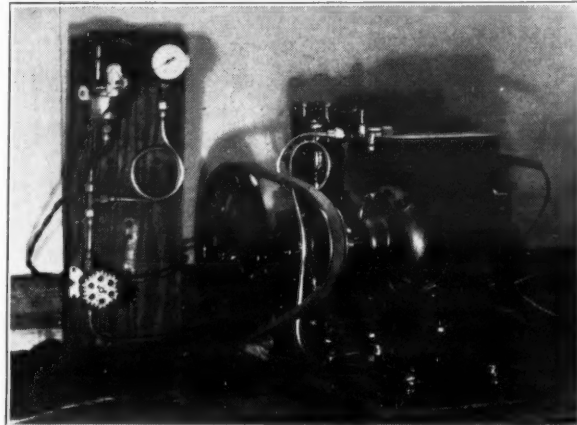
While this tester does not compare with elaborate and expensive dynamometers, we have found that motors that pass these tests rarely give any trouble whatsoever, and the simplicity of this gadget makes it easy for anybody to construct or to use. Cost of the parts is practically nil.

Ilg Introduces Line of Steam Unit Heaters

CHICAGO—Ilg Electric Ventilating Co. has recently introduced a new "stream-styled" steam unit heater, known as the "Vital Zone." Features of the new unit are a fully enclosed self-cooled motor, a two-piece steam header, an all-copper finned core, and adjustable louvers. The new heaters throw warm air from 40 to 80 feet, and deliver from 385 to 6,900 c.f.m.

Motor Testing Equipment

The picture at the right shows the motor testing setup used by Associated Refrigerator Plant, Inc., in checking motors brought in from jobs while the drawing below shows the tubing and electrical hookup.



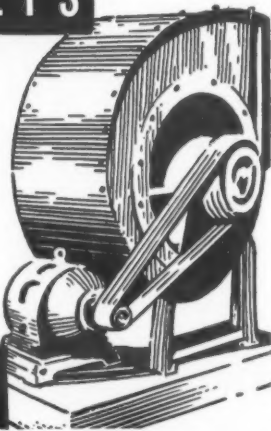
MANHATTAN V-BELTS

for the Service that Saves

POWER—because side compressibility makes belt grip the grooves without slip—because flexibility gives uniform "pull."

WEAR—because endless cord strength member floats in rubber in neutral axis, resisting internal heat and side wear.

TIME—because maintenance and service are uninterrupted.



THE MANHATTAN RUBBER MFG. DIVISION
OF RAYBESTOS-MANHATTAN, INC.
45 Townsend Street Passaic, New Jersey

ARE YOU LETTING THIS BIG PROFIT OPPORTUNITY GET AWAY?



The refrigerator locker business is booming. Be sure of your share of profits -- with A-S-E Froz-n-Food UNIT LOCKERS. They've been proved outstanding for every refrigerator locker plant requirement -- easy to sell -- easy to install -- with no unprofitable servicing -- steady repeat orders. Hundreds of dealers have cashed in on this money-making line. You can, too. Write us today for all the facts.

SOLELY BY REFRIGERATION DEALERS AND DISTRIBUTORS

ALL-STEEL-EQUIP COMPANY
Incorporated
112 Kensington Ave. Aurora, Ill.

Service Inspection Agreement Used by Ohio Maintenance Firm for Contract Business

By Robert M. Price

COLUMBUS, Ohio—With a total of 216 years refrigeration experience represented in its organization, United Refrigeration Service, Inc., service and installation firm here, "sells" this experience to customers by offering a service inspection agreement.

The sales appeal to customers and prospects comes in the form of a mail promotion folder in which it is pointed out that the investment in refrigeration equipment should be protected by regular inspection by experienced workmen.

This approach is backed up by an outline, in print, of the service firm's setup and policy. This outline states that the firm carries adequate insurance to protect the customer and the service man, that day and night service is maintained, and that a 30-day guarantee on work is maintained. The guarantee covers all labor charges, if a return call for the same trouble is necessary within the guarantee period.

INSPECTION SERVICE

The inspection service covers minor adjustments only. Any major service or repairs necessary is recommended and the cost of this work is given before the work is done.

The service includes oiling motors, checking and cleaning commutators and brushes, checking fuses, checking temperatures, checking water valve operation, checking water lines for stoppage, checking belt alignment and adjustment, cleaning up compressor, checking expansion or float valves for spill-over, making any minor adjustments necessary, and checking refrigerant leaks.

COST OF SERVICE

The cost of this inspection service depends on the amount of equipment to be serviced, with an additional charge for each compressor over two. This cost runs from \$1.50 to \$6, according to Paul Oberly, member of the firm. This cost, however, does not include material which might be necessary at time of inspection, nor does it include necessary service or maintenance between inspections. The inspection is performed each 60 or 90 days, as specified.

The inspection service, the promotion folder points out, will "more than repay its cost, because:

1. It will save minor motor repairs many times.
2. It will save on water and electric costs.
3. It will save loss of refrigerant.
4. It will save in many ways by keeping your equipment at its best in efficiency, and preventing a great many breakdowns of a more serious nature."

KEEPS VALUABLE CONTACTS

This plan has proved especially valuable in keeping contact with larger commercial customers, Mr. Oberly declares. This service, however, does not supplant the regular maintenance service offered by the company.

A force of 16 service men is kept on salary throughout the year. They are trained on service and installation on all kinds of refrigeration equipment. The firm has also been developing installation and service on oil burners and stokers to take up the slack in the winter months.

"Special effort is made to keep the organization flexible so that we can shift our men whenever needed," Mr. Oberly says. "Keeping them busy by increasing their ability to do service and installation of all

types has cut down our labor turnover and increased our total business volume."

The policy of "inspected service" has built confidence in the firm's work, especially in the case of national users. Through the service policy has come increased installation work on new or replacement equipment. "We sell no equipment ourselves and do not compete with our customers," Mr. Oberly explained. But they throw their installation and service work our way.

EXAMPLES OF SERVICE

As examples of the way customer's confidence has paid out, Mr. Oberly cited some recent installation jobs that came from commercial customers. In Marysville, Ohio the firm installed equipment in a locker plant engineered and sold by a commercial refrigeration sales organization.

The plant has 200 lockers, and the equipment installed in the locker and freezer room consisted of a compressor and 26 cold plates. From the same customer came a call to install cold plates and compressor equipment in a truck used on the locker owner's wholesale meat route.

In Newark, Ohio, refrigerating equipment was installed in the A. & P. super-market, consisting of one compressor on three display cases and a butter box, and another compressor on a large two-speed blower in a 12 x 14 cooler.

TRUCK INSTALLATION

Another installation job called for installation of equipment in five trucks used in the retail distribution of frosted food. On each truck a 1/2-hp. air-cooled compressor was used with plates. The freezer chest was constructed as a separate part of the truck, and was shaped to fit in a panel delivery truck. The compressor was installed on the end of the chest to allow replacement of the truck, and allowing the dealer to use the chests in the new truck.

"We have what we call a 'policy expense' in our business," Mr. Oberly said. "This expense comes from any extra cost we might have in special service to customers. But we have found that any extra expense we have in service, inspection, and installation is more than made up by repeat calls. We have found it is easier to keep good customers with good work than it is to hunt up new customers after your policy has backfired."



NEW
WHEEL PULLER
No. 5 Capacity 7" diam.
A simple, efficient tool for hard pulling jobs such as flywheels, fans and pulleys—universal for all make refrigerators. Rotating arms grip in any position—internal or external pulley—odd and even spoked wheels. Hex head power screw has knurled band for easy hand turning. Made of special steel, hardened and tempered. Fully guaranteed. Sold by mill supply and refrigeration jobbers.

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SUPERIOR DROP-FORCED TOOLS
REFRIGERATION TOOLS

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—Buy From Your Jobber—

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FOR more than a decade, "Day & Night" has served the Refrigeration Industry with Storage Type Water and Beverage Coolers. Now, it is proud to serve the U. S. Army and Navy with equipment built to Government standards. For long, dependable, economical service, be sure to specify "Day & Night."



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"DAY & NIGHT" ALSO BUILDS COOLERS TO MEET U. S. ARMY SPECIFICATIONS

The "Day & Night" Catalog illustrates and describes a complete line of storage type cooling units, with complete specifications as well as useful tables for estimating capacities for various loads. If you do not have a copy, write for yours today. No obligation.

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Warehouse Stocks at Convenient Shipping Points

Here's How! To Sell Your Locker Service

A Summary of Promotional Ideas Advanced At the National Locker Convention

By James McCallum

CHICAGO—Promotion, advertising, and customer education—as it must be with any young and growing industry—is still one of the biggest problems facing the owners and operators of the nation's 3,000-odd frozen food locker storage plants.

Any doubters of this statement need only to glance at a program of the second annual convention of the National Frozen Food Locker Association, which was held in Chicago Oct. 28 through 30, to be convinced. This program listed no less than three separate talks on various phases of this subject, and also scheduled this problem as the topic for one of the convention's breakfast discussions.

The need for concerted activity of this sort also was recognized in reports of the association's committees on Standard Locker Services and Practices and on Objectives and Activities. (See story in Nov. 6 issue of the NEWS.)

Speakers on the subject of locker plant promotion were two trade paper editors, Wayne Carver of Locker Patron and Frank Maher of Meat Merchandising, and one advertising man, Edward W. Jeffress of the Jeffress Advertising Bureau. Mr. Jeffress also acted as consultant at the breakfast discussion.

Mr. Carver opened his talk by urging the operators to make full use of the valuable aids made available by local farm bureaus and by extension services of various colleges and universities. All of these agencies, he pointed out, have done considerable work on the matter of customer education, and many of them have published bulletins of some sort on their findings.

He cited the write-ups which the locker industry had recently received in such nationally circulated publications as Collier's, Nation's Business, and Time. He stressed the fact that this sort of publicity,

although of a general and institutional character, was invaluable in selling the general idea of locker storage to the American public—in telling them what it was all about.

As for those promotional slants which might show more concrete results in terms of actual locker rentals, Mr. Carver suggested that plant operators tie in closely with local chapters of the 4-H Club, perhaps even to the extent of offering them—gratis—the use of a locker for their experiments in produce freezing and storage.

The value of high schools and other such educational institutions, he reminded his listeners, also should not be overlooked. The home economics activities of these schools provide an excellent opportunity for locker promotion, he stated.

The use of roadside signs is another good bet which most plant operators overlook, he advised. Two or three such signs strategically spaced along the main roads leading into the town in or near which the plant is situated would go a long way toward making the average motorist—and therefore, the average American—conscious of the existence of the locker storage industry, he declared.

A STANDARDIZED SIGN?

In this regard, Mr. Carver suggested that perhaps the national association could prepare some sort of standardized sign, with space, of course, for the name of the individual plant, which could be used all over the country. Such an idea, he explained, would tie in well with the "seal of approval" which had been suggested as an identifying symbol for all association members.

Mr. Carver warned the operators, however, not to let the appeal of such promotion stunts as these blind their eyes to the old standbys of local newspaper advertising and publicity, exhibits and contests at county and state fairs, effective window signs and displays, and plant appearance and service of such a nature as to make the customers want to come back again and again.

Above all, he told his listeners, you should maintain a high degree of flexibility in the services you offer, so as to capitalize to the utmost on your plant's profit-making capabilities. Remember that the banker or the lawyer in your community is going to demand more services—and be able and willing to pay for them—than is the tenant farmer or the manual laborer.

STUNTS CATALOGED

Mr. Maher confined his talk to a concise cataloging of unique ways in which various locker plant operators have attracted public attention to their plants and to the services which they offer.

Here are condensed versions of some of the schemes he discussed: One locker operator who opened his plant just before the Fourth of July sponsored a public display of fireworks. He saw to it that this display was liberally advertised and publicized, with the name of the plant being prominently mentioned each and every time.

Another owner sponsored a contest for the biggest potato grown in the area. He put on display in his plant all of the competing "spuds," each identified by the name of the contestant. This contest cost only \$15. The operator sold the potatoes which he collected for \$31.40. He actually made money by publicizing his plant.

If no butcher shop in the community offers fancy cuts of meat, here is a splendid opportunity for the locker plant to cash in on the capabilities of its butcher.

Then there's the plant which periodically issues a little mimeographed sheet of local gossip. Based on the universal human desire for the "lowdown" on the other guy, this stunt's a natural.

The old "use the user" method of promotion was given a new twist by one plant operator who made phonograph recordings of interviews

with satisfied customers and then used these effective user statements to garner new patrons.

Many plants have used some variation of this one, but it's always good—the old idea of tying in with the local movie house either by preparing a film or slide "trailer" to be presented on the screen, or by sponsoring a Saturday matinee for the kiddies.

Walking promotions which carry their sponsor's story direct to the public, and attract attention because of their very novelty are always effective. In line with this idea, one plant owner had a broken-down, dilapidated cow led through the streets with this sign attached to its flanks: "None of the customers at the Blank Locker Plant will have me. I'm not good enough for them." Another plant employed a sandwich man dressed as an Eskimo. The legend on the boards read: "I'm the ambassador from YOUR frozen food locker plant." The stress on the word "your" is important—it personalizes the message and thus makes it more effective.

Amateur theatricals, spelling bees, etc. also come under the heading of old standbys which are practically infallible as attention-getters, especially in smaller communities.

Building business two ways, one plant owner offered a prize for the patron who put the greatest volume of food through his locker in a given period of time.

Still another operator fastened a sign to the side of his private automobile. It read: "I'm going to the Blank Locker Plant—Want a Lift?"

Presiding over the breakfast discussion on "The Marketing of Locker Service," Mr. Jeffress declared that "the locker business will never get anywhere being just a pork and beef business. Locker operators must take advantage of the opportunities for processing and storing unseasonal and out-of-the-ordinary foods, and in doing so must make the most of this chance for consumer education."

Pointing out that the potential of the locker plant does not stop when its lockers are rented on a one-to-a-customer basis, Mr. Jeffress prophesied that "the two-locker family will someday develop just as did the two-car family in the past."

OPERATORS CONTRIBUTE

During the ensuing discussion, in which many members of the breakfast group took part, several sound suggestions for locker plant promotion were offered.

The possibility of using promotional films was suggested by one operator, and further discussion brought to light the fact that such films were obtainable from the U. S. Government's Department of Agriculture, as well as from such private industrial firms as Birds Eye foods and Armstrong Cork.

Another plant owner told how his butcher had developed a "unitary" method of dividing a half of beef among a number of families so that no one family received too much of any one cut. This, he said, had removed one of the big objections of his patrons to wholesale meat purchasing.

Coming back to the topic of unusual or unseasonal foods, various operators added these items to the list: cantaloupe, woodchucks, clams, and fresh limes.

Frozen food demonstrations, and even periodic frozen food dinners for selected lists of prospects also were suggested. In this regard, however, it was advised that a home economist from outside the town in which the plant was located be selected to stage the demonstration, inasmuch as it was felt that the advice of a stranger would have far more weight.

Cincinnati ASRE Men To Discuss Deepfreeze

CINCINNATI—Discussions of the Deepfreeze frozen storage unit and of motor selection for refrigeration and air conditioning applications will highlight the December meeting of the Cincinnati section of American Society of Refrigerating Engineers, scheduled for Dec. 16 in the Gibson hotel.

The meeting, scheduled for 8 p.m., will be preceded by a dinner at 6:30 in the Rathskeller.

The Deepfreeze unit will be explained by C. L. Olin, western sales manager of Servel, Inc., and motor selection and application by L. A. Etienne, branch manager of Wagner Electric Corp.

Exhibits to be shown at the meeting include the Deepfreeze unit and the Bush Defroster unit cooler, for temperatures below 32° F., arranged for defrosting by means of tap water.

1,000 Lockers

HARRISONBURG, Va. — R. L. Jeffries has opened a 1,000-locker frozen food storage plant here.

DISPLAY CASES
Write for details of this sensational new 100% PORCELAIN Display Case line.
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When the lubricating oil, free from hard carbon and wax, is returned to the compressor crankcase, the danger from burned-out bearings is largely eliminated.

An Aminco Oil Separator **AUTOMATICALLY** separates the oil which becomes mixed with the refrigerant gases and returns it to the crankcase, to do its full duty, that of lubricating compressor bearings.

The electrically welded steel shells of Aminco Oil Separators withstand high pressures without breakage or deformity. Each shell is insulated to avoid condensation and to maintain high pressures.

Sizes range from 1/4 to 120 ton capacity. Send for full information regarding the correct usage of oil separators to save service troubles.

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Valves and Fittings
The Standard of the Industry
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Dayton V-BELTS
Silent, vibrationless, dependable, long-lasting. Powerful grip prevents slippage. A nearby distributor carries a complete stock for appliances and machines.
THE DAYTON RUBBER MFG. CO., DAYTON, OHIO
World's Largest Manufacturer of V-Belts

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FRENCH SMALL TUBE BRANCH
General Offices: Woburn, Mass.

STARTS A COLD COMPRESSOR!

Yes! Ranco 91G2 control will start a cold compressor—because 91G2 is a Temperature Control and its operation is affected only by fixture air temperature and coil temperature, and not by gas pressure in the system.

This most modern of all controls for Walk-in Coolers, Refrigerator Display Cases and similar applications, maintains proper fixture air temperature—and assures defrosting of the coil under all load and weather conditions, without adjustment.

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RANCO, Inc. Columbus, Ohio, U. S. A.

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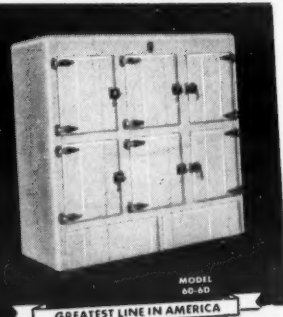
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RECOMMENDED AND SOLD
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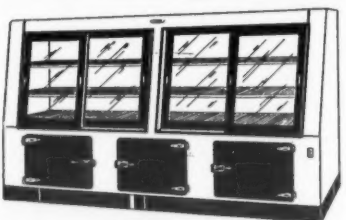
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FOGEL REFRIGERATOR COMPANY Since 1899
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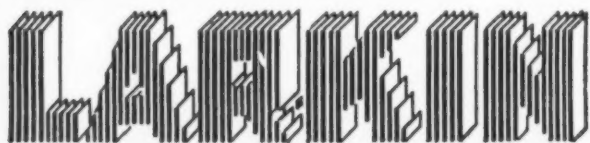
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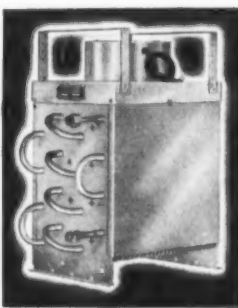
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**A.S.R.E. Is Given Data on Properties
Of Silica Aerogel as an Insulant**

NEW YORK CITY—"The Thermal Insulating Properties of Silica Aerogel" were described to members of the American Society of Refrigerating Engineers at their convention here last week by John F. White, Monsanto Chemical Co., the firm that has been the chief factor in the development of this product.

The following are excerpts from Mr. White's outline of the story of silica aerogel as an insulant for use in refrigerating work:

Silica aerogel may be described briefly as the dried gel obtained by dehydrating silica jelly in such a manner that the solid colloidal structure present in the jelly undergoes no change.

The silica aerogel so produced is a light, voluminous solid having a density of 7.0 lb. per cu. ft. and a pore volume of about 94%. Calculations indicate that these pores have a diameter of the order of 400 Angstroms.

Determinations of the thermal conductivity on various samples lead to the conclusion that its conductivity is approximately 10% less than that of still air.

Further development work on silica aerogel has disclosed that

although the simply prepared material is an excellent heat insulator it can be modified to enhance its properties for this use.

This work has shown the need of preventing the transmission of infrared light or radiant heat through the mass. (This is done by making it opaque to radiant heat.)

**PROPERTIES OF
SILICA AEROGEL**

The properties of silica aerogel pertinent to its use as a thermal insulator are listed below.

Thermal Conductivity: The thermal conductivity of the opacified aerogel is approximately:

Mean Temperature	K (B.t.u. per hr. per sq. ft. per in. per ° F.)
100° F.	0.15
350° F.	0.25
500° F.	0.30

Effective Temperature Range: There is no minimum temperature. The aerogel may be heated to about 1,400° F. without undergoing any change. Above this temperature there is a gradual change from the amorphous state to the crystalline state resulting in a change of structure and loss in efficiency.

Moisture Adsorption: Insulating materials of this type will adsorb water by two different methods. One method is by capillary condensation, whereby water vapor in the surrounding air is caused to condense by capillary forces in the structure. Silica aerogel is not particularly active in this respect. Water is also adsorbed by insulating materials because the temperature gradient of the insulator is such that a part of it is below the dewpoint and water is continually deposited by condensation from air circulated by convection currents. Since the silica aerogel in powder form eliminates the presence of any large air voids convection currents are virtually eliminated and so fresh moisture laden air can penetrate into the mass by diffusion only.

Settling: Tests have shown that under vibration the aerogel will not settle more than any fine granular material.

Density: Unopacified aerogel will pack to 7.5 lb. per cu. ft. Opacified aerogel will pack to 8.25 lb. per cu. ft.

**USES IN REFRIGERATED
STORAGE AND TRANSPORT**

The unusually low thermal conductivity of silica aerogel makes it possible to visualize more or less radical changes in the design of refrigerated storage and transport units. By replacing an insulation having a K of 0.30 with one of 0.15 the volume of insulation space needed is reduced proportionally and the space saved thus added to the storage volume.

The silica aerogel project for insulation is still in the development stage and research is still in progress. The most recent innovation is the preparation of a grade that has a density in the order of 3.75 lb. per cu. ft. Tests have shown that the performance of this type is equal to the heavier grade, and it is expected that facilities for its production on a semi-commercial scale will be erected shortly. A small plant for the production of the heavier grade is already in operation.

Regarding the cost of silica aerogel, Mr. White maintained that, considering its efficiency, it could be considered "competitive." At the present time, the cost of silica aerogel was said to be \$4 per cu. ft. However, it was predicted that the cost could be brought down to 75 cents per cu. ft. as the use and application of silica aerogel as an insulation was extended.

Penflex Tubing Bulletins

PHILADELPHIA—Two engineering bulletins describing and illustrating some of the uses of its Penflex flexible all-metal tubing have been issued by Pennsylvania Flexible Metallic Tubing Co.

First bulletin describes the new Penflexweld, designed for use in applications using high-pressure liquids, gases, or steam, and the second the standard Penflex galvanized steel hose and couplings.

**Air Cooling Allows
Transfer of Tulip
Industry To Java**

BATAVIA, Java—Tulip bulbs and lilies of the valley—formerly imported from Holland—today are being raised in tropical Java, Dutch East Indies, under climatic conditions identical with those found in The Netherlands.

When war broke out in Europe, supplies of tulip bulbs and other plants from Holland were cut off almost completely. In addition, high cost of freight and import duties made the Holland-grown bulbs practically prohibitive in price. So the Van Tellingen flower shop called in air conditioning engineers and inquired if it were possible to duplicate the climate of Holland in Java.

After careful study, a specially constructed storehouse of brick and concrete—using special insulation for walls, floor, and roof—was designed. A low temperature air conditioning unit with an air-cooled "Freon" compressor was then installed.

Extreme care had to be taken to see that the flower bulbs were not subjected to excessive drafts or air currents, which would cause the bulbs to dry out. Furthermore, absolute control of humidity had to be maintained. High moisture might cause the bulbs to rot, while a high temperature with dry air might cause the flower bulbs to sprout.

Air in the storehouse rises only 8° during the shut-down period, it has been found, due mainly to the large mass of cold flower bulbs in storage. This is ideal for flower bulbs, since they require regular "rest periods" at low conditions to attain best results.

**CLASSIFIED
ADVERTISING**

RATES: Fifty words or less in 6-point light-face type only, one insertion, \$2.00, additional words, four cents each. Three consecutive insertions, \$5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Air Conditioning & Refrigeration News, 5229 Cass Ave., Detroit, Mich.

POSITIONS AVAILABLE

COMMERCIAL REFRIGERATION Sales Supervisor—Opportunity for man who can both sell and organize his own department, specializing in beer cooling, reach-in refrigerators, bottle coolers, ice cream cabinets, etc. The name of the manufacturer is one of the oldest and most respected names in the industry. The city is located on the Eastern Seaboard having a trading population of a million and a half. The distributor is twelve years old with a sound financial set up. Write stating complete details including sales volume and earnings for the past three years. Box 1277, Air Conditioning & Refrigeration News.

WANTED: Salesmen to represent distributors selling nationally known electric refrigeration equipment. Territories open are Carolinas, Virginia, Georgia, Kentucky, Alabama, Mississippi, Louisiana, Florida, Tennessee, Texas, Arizona, California, and Cuba. This is an opportunity for men who are large earners and producers. When writing, state complete details as to qualifications. Write Box 1281, Air Conditioning & Refrigeration News.

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DO YOU need a one-man advertising and promotion department or an assistant? Sales promotion and advertising manager of manufacturer selling through commercial refrigeration dealers desires change. Can really sell through printed word; 1940 Dartnell gold-medal winner for sales letter. Experienced all types sales literature. Box 1283, Air Conditioning & Refrigeration News.

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A LARGE manufacturer of refrigeration condensers, coils, and related items, with established reputation, desires representatives to contact general trade. Protected territories. For further information write Box 1282 advising territory desired.

FRANCHISES AVAILABLE

SEND FOR PRICES and literature on the General 1940 all streamlined refrigerator display case line. Over 40 years experience manufacturing good commercial refrigerators. On a comparative price test with other makes of equal specifications, prices are lowest in the country. GENERAL REFRIGERATOR & STORE FIXTURE CO., 5th & Bainbridge Sts., Philadelphia, Pa.

BUSINESS OPPORTUNITIES

COMMERCIAL Refrigerator manufacturing business, old, established, in large eastern city, manufacturing reach-in refrigerators, walk-in coolers, double and single-duty cases, and special-built refrigerators for all purposes, now in operation,

will sell reasonable, or consider a partner, must be first class salesman with some investment, excellent opportunity for right man, further information. Box 1280, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

COIN METERS for sale—Limited quantity of NEW Metermatic Coin Meters, No. M-11, 110 Volt, 60 cycle, 1/2 HP. for sale at reduced price, \$3.50 each. Write or wire us direct. Orders filled as received and only as long as stock on hand. WEBER SHOWCASE & FIXTURE CO., INC., 5700 Avalon Blvd., Los Angeles, California.

REPAIR SERVICE

HERMETIC REBUILDING and Exchange Service General Electric—Westinghouse—Majestic and Grunow Units, Compressors and parts. Immediate shipment. Old unit can be returned later in our crate. We also exchange floats, Evaporators, Controls. Write for price list specify S6. SERVICE PARTS CO., 1101-03 N. 24th Ave., Melrose Park, Ill.

CONTROL REPAIR Service. Domestic controls reconditioned equal to new at a small cost. All work guaranteed for one year. Prices upon request. UNITED SPEEDOMETER REPAIR CO., INC., 342 West 70th Street, New York City.

PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

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Forged Brass Ends—Copper Shell—1/4" or 3/8" Flare. Sizes listed are diameter and length of shell.
1 x 4—\$8.00, 1 x 6—\$10.00, 2 x 2 1/2—\$1.05,
2 x 6—\$1.37, 2 x 12—\$1.90, 2 x 18—\$2.40.
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for seal replacements
A complete line in all sizes

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Dealers
Wanted for
Midwestern
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CAMPBELL REFRIGERATOR CO.
Milwaukee, Wis.

The
Seal
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Quality
Since
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UNIVERSAL COOLER

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BUNDY TUBING

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CUSTOMERS

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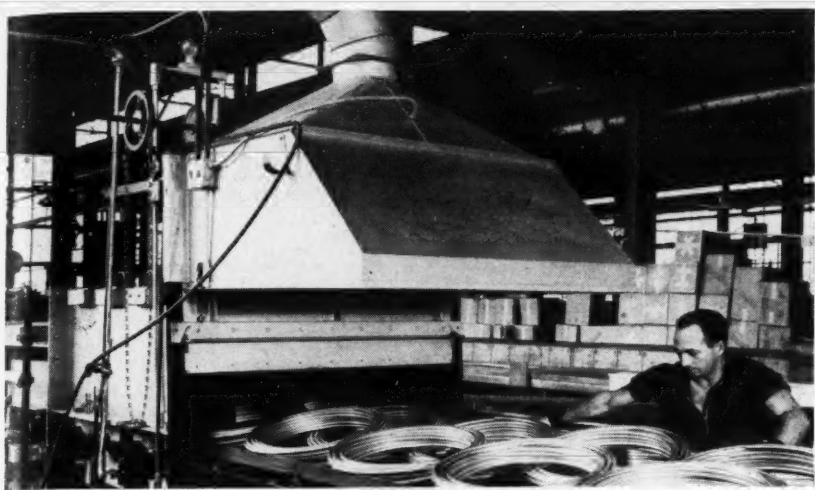
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Wanted!

The market for "pack-
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is almost unlimited.
But no sale is better than the unit
you sell! It will pay you to investi-
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a liberal sales franchise... and
equipment that is unex-
celled. Write for details.

GENERAL REFRIGERATION DIVISION
Yates American Machine Co.
Dept. AC 2, Beloit, Wisconsin

Trip Through New Penn Brass Plant



(Above) Three important steps in the manufacture of copper tubing for refrigeration use are shown in this camera tour of the plant of Penn Brass & Copper Co., Inc., Erie, Pa. Shown first is the automatic annealing furnace, where coils that have been purged with inert gas and placed on trays are completely deoxidized and properly tempered for easy bending and flaring. Given any specific Brinell or hardness reading, the annealing furnace operator can select the exact heat treatment that will produce the specified softness, by setting the dials.

(Upper right) Emerging from the annealing furnace cooled and ready for wrapping, the copper coils next are sealed at the ends under a large punch press, and soldered over the sealed ends to insure against moisture, dirt, and other matter entering the tubing and affecting its future satisfactory operation. Seven inspections in process weed out imperfections, and test specimens of each batch are examined and records maintained to assure exact duplication of any specifications, if neces-

sary, as well as a check on the processing.

(Lower right) After sealing, the coils go to the wrapping machine, where crepe paper is wound tightly around the outside to protect the tubing in shipment as well as to keep it free from dust, moisture, and grease. Gloved hands prevent the acid from moist hands from marring the finish of the tubing. In fact, no bare hands touch the tubing at any time in its manufacture—in its journey over the draw table, into the coiling machine, through the washing solution and drying process, into the annealing furnace.



Operating and Service Methods For Dry Expansion Counter-Freezers

By Arch Black and Dean C. Seitz

There are several manufacturers of ice cream counter freezers of the dry expansion type, and in this chapter will be outlined some of the details of ice cream counter freezers not using brine and particular reference will be made to the most common types.

introduction to the field. By studying the information given on them, the knowledge obtained should be ample to allow the service engineer to render the necessary service to those models which are not made mention of.

Taylor 2-1/2 and 5-Gallon Freezers

Taylor Freezers

The earlier models manufactured by Taylor Freezer Corp. were of the vertical and horizontal types. A 2½-gallon freezer was offered of the type illustrated in Fig. 3 in the July 31 issue of AIR CONDITIONING & REFRIGERATION NEWS, and a 5-gallon freezer made at that time was of the horizontal type. By operating either of these freezer heads with condensing units self-contained or remote or assembled to a hardening cabinet, mix cabinet, etc., the line is complete and designated by various model numbers.

Later Taylor introduced the 1-gallon freezer head of the horizontal type for remote installations and multiple hookups. And in 1939 what was known as the "Freeze-Master" was introduced, known as the model 612-R. In 1940 the model 640-R which is known as the "All-In-One" freezer was introduced.

The freezers offered by Taylor today and in recent years are of the semi-flooded direct expansion type, construction being of the two-cylinder type. The refrigerant is expanded into the jacket contacting all sides and end of inner freezer wall. These freezers are designed for use with either methyl chloride or "Freon-12."

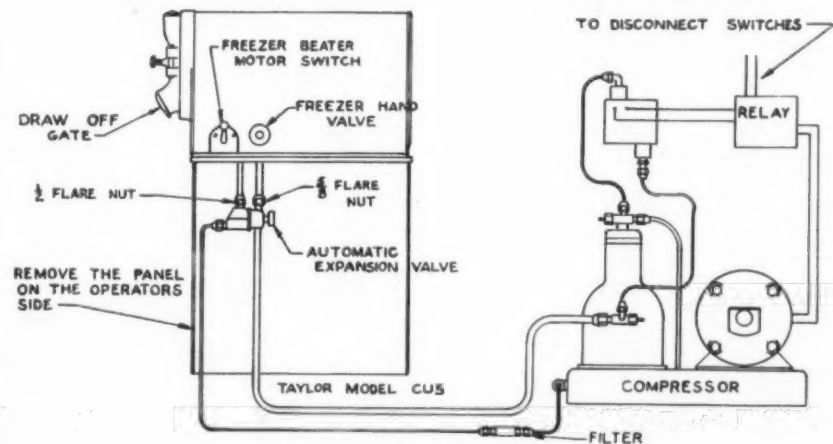
For the purpose of these articles, it will not be necessary to cover all models due to certain similarities, but those mentioned above will be covered in detail under respective headings and the sequence of their

When a freezer without a cabinet is connected to the condensing unit only, which is the simplest type of installation, there will only be an automatic expansion valve for the freezer and a standard type pressure control to operate the condensing unit. The condensing unit with methyl chloride as a refrigerant is set to cutout at 6 inches of vacuum and cutin at 1 lb. When "Freon-12" is used it is set to cutout at approximately 0.5 lbs. and cutin at approximately 5 lbs. pressure.

Freezers on a stand with no hardening cabinet must have a pressure control for not only does it provide safety of the high pressure cutout as shown in Fig. 14, but for the settings of the pressure control as mentioned above the pressure switch will close and start the compressor each time the hand valve of the freezer is opened to freezer cream. When the hand valve is closed the pressure switch will open at the cutout point mentioned above.

(Part of a series on servicing low temperature equipment, now running in the News.)

Fig. 14—Hookup For Freezer Only



MUELLER BRASS CO. "Little Giant" Purger

See it at Booths 120 & 121

Refrigeration and Air Conditioning Exhibition

Stevens Hotel, Chicago Jan. 13-16, 1941

National Lock Co. Rockford, Illinois

Manufacturers of Commercial and Domestic REFRIGERATOR HARDWARE

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WATER COOLERS—FILTERS to comply with U. S. NAVY—ARMY Specifications Filtrine Mfg. Co., Brooklyn, N. Y.

BIGGER PROFITS WITH THE COMPLETE TYLER LINE . . .

★ With more money in circulation, stores, restaurants, hotels, bars, taverns,—all need new equipment to get their share of EXTRA BUSINESS. The complete Tyler line meets every need—offers extra value, extra savings. Write TYLER FUTURE CORPORATION, DEPT. R-2, NILES, MICHIGAN TYLER DEALERS ARE MAKING MONEY!



CHIEF FREEZE-UM SAYS: ME ALWAYS SMOKE PIPE OF PEACE—NO COMPETE WITH CUSTOMERS CUSTOMERS MY FRIENDS!

Because Chieftain makes complete refrigerated equipment, it does not, in any way, compete with its customers. TECUMSEH PRODUCTS CO. TECUMSEH, MICH.

You can SPEED UP your flaring!



• The new Imperial Flaring Tool with slip-on yoke, provides ease and speed of operation never before attained in a flaring tool. The yoke is made so that it can be slipped on over the bar without twisting or turning. The inside edges of the yoke are slotted so that once in position a slight turn holds it in place on the bar. Yokes are made of forged steel. An additional advantage of this tool is the construction of the bottom of the yoke, which permits flares to be made where there is little space between nut and the end of tubing. Fin tubing sometimes offers this problem. Flares soft copper, brass or aluminum tubing. No. 185-2 Imperial Flaring Tool, flares ¼", ½", ¾", 1", 1½", and 2" O. D. tubing. Price each, \$4.25. Also available for all other sizes of tubing. THE IMPERIAL BRASS MFG. CO., 565 S. Racine Ave., Chicago, Ill.

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QUALITY has made SHERER'S name a by-word with commercial dealers. A complete line of sure-fire leaders, plus whole-hearted factory co-operation, demands investigation as a profitmaker for you.

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Fan Blades and Blower Wheels



THE TORRINGTON MANUFACTURING CO. of TORRINGTON, CONNECTICUT

Anaconda Copper Refrigeration Tubes Dependable!



Engineers In Annual Gathering



(Left) Nels Rosberg, Los Angeles engineer and the man who makes the snow scenes for the movies, is in a serious mood with John Stone, manager of the Johns-Manville refrigeration division, and newly elected treasurer of the A.S.R.E. (Right) "More jobbers should come to these meetings," Charlie Logan of Superior Valve & Fittings tells Irving Sussmann, County Seat Plumbing Supply Co., Inc., White Plains, N. Y. jobber, as R. M. Armstrong of Richmond Engineering listens in.

Study of Appliances Planned by NRDGA

(Concluded from Page 1, Column 4)

A special effort will be made to have top management executives of department stores attend the major appliance session, since it is felt that, generally speaking, these departments do not receive the attention and support their volume merits. To insure interest of store heads in the session, an announcement of the program's purpose will be made at the general convention session preceding the appliance meeting.

Following topics are tentatively scheduled for the session:

A statistical survey of the trend in appliance merchandising.

The commission set-up of paying appliance salesmen.

Proper display of appliances.

What can be learned from the mail order chain stores?

Department stores look only at percentage, not dollar profit.

Appliance selling—a specialty selling job.

Putting the punch in appliance advertising.

Servicing major appliances.

As a special feature to close the session, a special presentation of the "discount house" problem will be made.

Department Stores Study Draft Problem

(Concluded from Page 1, Column 4) mates had set the likely percentage of employees without dependents at about 6%. Percentage of male employees of draft age to total male employees averaged 43% for all stores.

Indications that it may be necessary to employ women to fill some positions vacated by draftees also were given study by the survey, but the feeling of store executives was that women could not successfully fill posts in major appliance departments, although they would be satisfactory in selling home furnishings, and several other department store departments.

Commercial Shipments For October Show Drop in Volume

DETROIT—World shipments of commercial refrigeration equipment by member companies of National Electrical Manufacturers Association showed a general decline during October in dollar volume, in relation last year. Total volume of all shipments to both September and to October of 1939 was \$1,248,868, as compared to \$1,390,312 in September and \$1,336,277 in October, 1939.

Shipments of pressure water coolers totaled 1,448 units valued at \$157,491 during October, as compared to 960 units valued at \$106,002 last October; beverage cooler shipments were 2,180 units valued at \$197,615, against 1,219 units valued at \$119,470 last year; and condensing unit shipments, while leading in units, 7,088 to 6,603, declined in value to \$606,643, compared to \$636,273 in 1939.

Comparative October shipments for 1940 and 1939 in the U. S. alone were as follows:

	1940	1939
Bottle Water Coolers.....	129	200
Pressure Water Coolers.....	1,351	896
Ice Cream Cabinets.....	1,033	1,644
Bottle Beverage Coolers.....	2,046	1,164
Commercial Evaporators.....	1,530	2,213
Condensing Units.....	6,187	5,635
Total Dollar Value.....	\$1,098,231	\$1,170,834

Electrolux Names New New York Distributor

(Concluded from Page 1, Column 2) Inc. Consolidated Edison Co., which has been Servel distributor here since 1927, will discontinue handling the line.

The new distributorship has opened offices in the National City Bank building, 17 East 42nd St. Beyond that, no details of the company's plans were revealed. Mr. Sellman retired from the Servel organization last May.

Consolidated Edison will continue to take orders for its cooperating dealers for gas refrigerators, as it has in the past, and as it does for all other mechanical refrigerators. The company also will continue to service Electrolux units, as in the past, but on a revised price schedule showing increases of 33 1/3 to 50%.

Edward Cheetham Dies In Tecumseh Dec. 6

TECUMSEH, Mich.—Edward B. Cheetham, 49, southeastern representative for Tecumseh Products Co. and Revco for the past three years, died Friday, Dec. 6 here. Mr. Cheetham had been ill with a heart ailment for nearly six months.

Mr. Cheetham was a veteran in commercial refrigeration sales work, having started with Nizer Corp. in the twenties and later holding a prominent position in the Kelvinator commercial refrigeration sales department. In 1933 he was appointed director of commercial refrigeration sales for Gibson Electric Refrigerator Corp., and in 1935 joined Pelco as southeastern representative.

He was a member of the American Legion. Surviving him are his wife and three daughters.

October Nema Commercial Sales Near 12,000 Unit Mark

The following report of commercial refrigerating equipment sales for October, 1940 was made to the Commercial Refrigeration Section of the National Electrical Manufacturers Association (Nema) by the following 15 companies:

Baker Ice Machine Co., Inc., Brunner Mfg. Co., Carrier Corp., Crosley Corp., Frigidaire Div. General Motors Corp., General Electric Co., Gibson Electric Refrigerator Co., Kelvinator Div. Nash-Kelvinator Corp., Merchant & Evans Co.,

Norge Div. Borg-Warner Corp., Servel, Inc., Universal Cooler Corp., Vilter Mfg. Co., Westinghouse Electric & Mfg. Co., and York Ice Machinery Corp.

SALES FOR OCTOBER, 1940		Domestic		Canadian		Other Foreign		Total World	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
1. Bottle Water Coolers—Complete.....	129	\$ 9,890	2	\$ 132	11	\$ 821	142	\$ 10,843	
2. Pressure Water Coolers—Complete.....	1,351	147,584	15	1,399	82	8,508	1,448	157,491	
3. Water Coolers—Low Side Only.....	56	3,648	.....	.....	3	165	59	3,813	
4. Ice Cream Cabinets—Complete.....	1,033	148,422	26	4,750	60	7,009	1,119	160,181	
5. Ice Cream Holding Cabinets Only (Remote)....	102	14,025	2	222	.....	.....	104	14,247	
6. Bottle Beverage Coolers—Complete.....	2,046	183,201	44	4,228	90	10,186	2,180	197,615	
7. Beverage Coolers (No High Sides).....	28	2,029	5	375	.....	.....	33	2,404	
8. Milk Coolers—Complete.....	.....	.....	.....	.....	.....	.....	.....	.....
9. Milk Cooling Cabinets (No High Sides).....	20	961	.....	.....	.....	.....	20	961	
10. Commercial Evaporators—Not Reported Above (Including Cold Diffusers, Brine, and Other Spray Evaporators, Etc.).....	1,530	68,513	391	12,960	182	9,753	2,103	91,226	
11. Condensing Units Less Than 1/2 Hp.....	2,078	88,468	77	3,405	126	6,189	2,281	98,062	
12. Condensing Units—1/2 Hp.....	1,619	100,376	45	2,884	185	10,972	1,849	114,232	
13. Condensing Units—3/4 Hp.....	936	80,424	103	8,501	88	7,616	1,127	96,541	
14. Condensing Units—1 Hp.....	730	77,433	47	4,841	55	5,445	832	87,719	
15. Condensing Units—1 1/2 Hp.....	343	45,075	5	611	44	6,142	392	51,828	
16. Condensing Units—2 Hp.....	194	33,279	18	2,950	41	7,005	253	43,234	
17. Condensing Units—3 Hp.....	148	31,413	10	2,231	33	6,823	191	40,467	
18. Condensing Units—5 Hp.....	65	17,073	.....	.....	14	3,851	79	20,924	
19. Condensing Units—7 1/2 Hp.....	36	15,022	.....	.....	8	6,214	44	21,236	
20. Condensing Units—10 Hp.....	28	21,262	.....	.....	1	489	29	21,751	
21. Condensing Units—15 Hp.....	4	2,714	.....	.....	.....	.....	4	2,714	
22. Condensing Units—20 Hp.....	4	4,124	.....	.....	.....	.....	4	4,124	
23. Condensing Units—25 Hp.....	2	1,660	.....	.....	.....	.....	2	1,660	
24. Condensing Units—30 Hp.....	.....	.....	.....	.....	.....	.....	.....	.....
25. Condensing Units—40 Hp.....	.....	.....	.....	.....	1	2,151	1	2,151	
26. Condensing Units—50 Hp.....	.....	.....	.....	.....	.....	.....	.....	.....
27. Condensing Units—60 Hp.....	.....	.....	.....	.....	.....	.....	.....	.....
28. Total—All Condensing Units (11 to 27).....	6,187	518,323	305	25,423	596	62,897	7,088	606,643	
29a. Condensers—Sold Separately.....	1	203	.....	.....	2	378	3	581	
29b. Shell & Coil or Shell & Tube.....	2	1,432	.....	.....	1	1,431	3	2,863	
30. Total—All Commercial Refrigeration.....	\$1,098,231	\$49,489	\$101,148	\$1,248,868	

dependable valves control refrigeration...

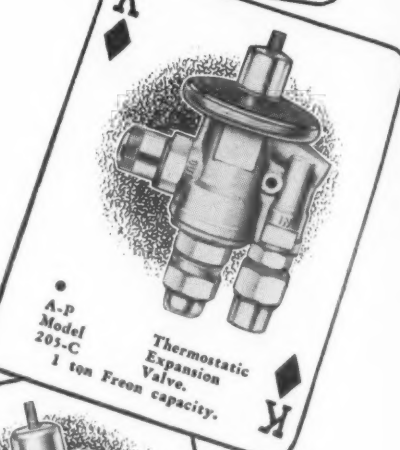
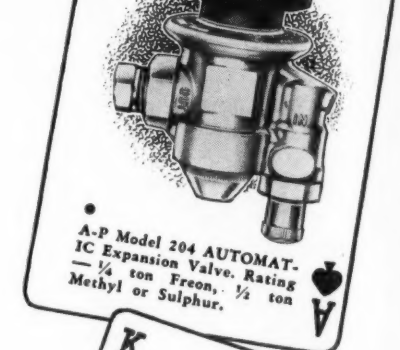
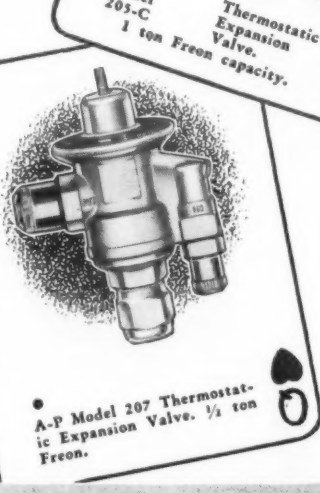
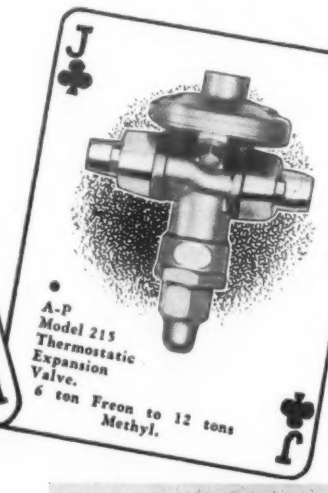
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